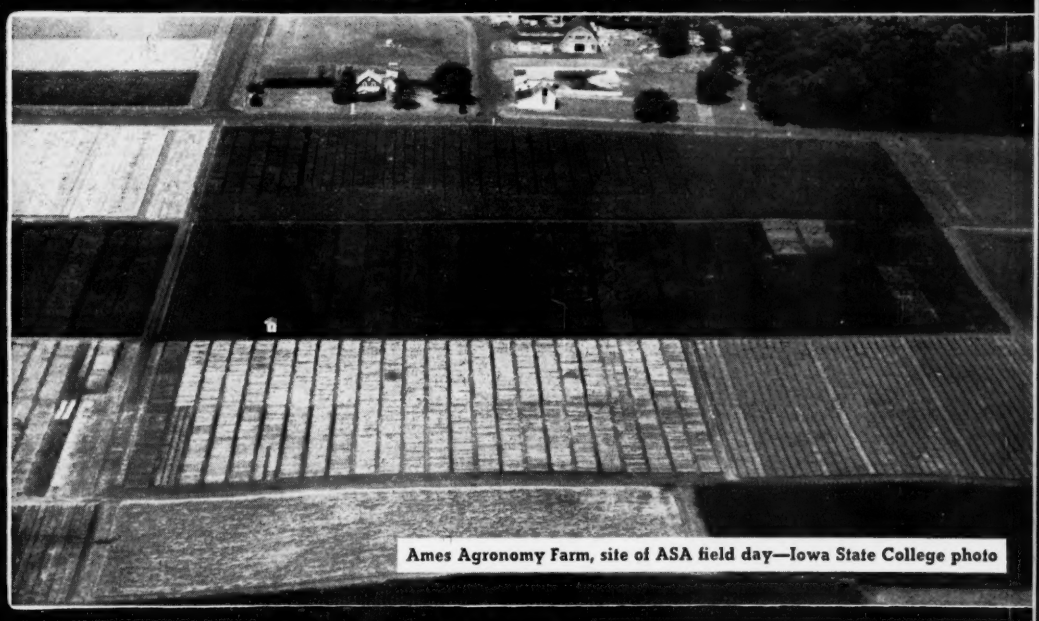
THE Soybean Digest

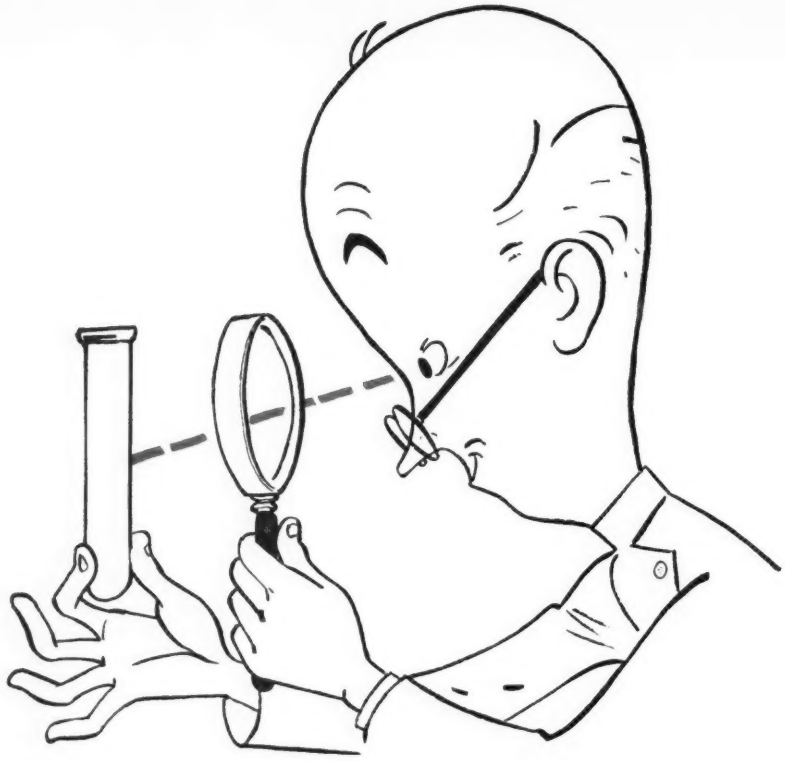


Ames Agronomy Farm, site of ASA field day—Iowa State College photo

Official Publication

AMERICAN SOYBEAN ASSOCIATION

VOLUME 11 • NUMBER 6 JUNE • 1951



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THE Soybean Digest

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HUDSON, IOWA

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IN THIS ISSUE

	page
Editor's Desk	4
Activities of Your Association	6
Growers	8
Des Moines Host to ASA Convention	10
Soybeans Grew Big in Missouri — W. C. ETHERIDGE	12
World Fats and Oils Situation — ROBERT M. WALSH	14
Nutritional Value of Soy Proteins — FRED H. HAFNER	18
Report on Peoria Meeting	20
Storage Changes Farm Buildings	21
June Crop Report	22
New High for World Crop	26
Publications	30
Grits and Flakes	32
Washington Digest — WAYNE DARROW	38
In the Markets	42
Letters	46

THE AMERICAN SOYBEAN ASSOCIATION

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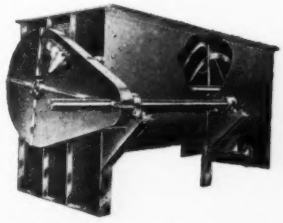

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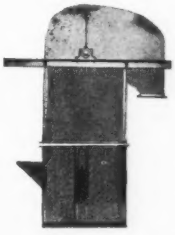

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Equipment

EDITOR'S DESK

It Just Isn't Good Business

Installation of soybean cleaning or scalping equipment should be given serious consideration now by every soybean buyer whose plant is not now equipped to remove foreign material. It will be a good investment for this and coming years.

True value of a bushel of soybeans is based on the pounds of oil and meal it will yield. Freedom from foreign material, especially green and wet weed seeds is an important factor. Low moisture content is another. Both contribute materially to keeping quality. In spite of our present soybean grading standards at least some buyers are going to pay premiums for good quality soybeans. The buyer who has cleaned his beans as they came to him will have premium soybeans to offer. And if they stay in storage, he will have fewer spoilage worries.

It is very difficult to know exact foreign material content of soybeans placed in storage. It is within the realm of possibilities that cleaning equipment might pay initial and operating costs by removing the foreign material so it might be added back at the 3 percent level now allowable. Starting with clean beans, the addition of 2.9 pounds of waste materials to each 100 pounds of soybeans is merely good business. Some handlers are doing it—why not the remainder? The Ohio Farm Bureau Federation and many state grain dealer organizations fought hard in the recent hearings for the privilege of making this addition. They won. The standards were not changed. The man who markets clean soybeans, low in moisture, is to be penalized.

We still believe the highest possible quality product is the cheapest product. Oat screenings do not make good soybean oil. Nor soybean oil meal. Neither do wheat screenings. Nor even corn. Weed seeds produce little oil, but much storage trouble. Three percent foreign material means three percent loss in end products.

The buyer has a very easy control. He merely pays 3 percent less for the soybeans he buys. Then the honest, careful producer subsidizes the processor operations by 3 percent when he brings clean beans to market.

The answer? If a grower harvests clean beans he is not a good business man unless he adds foreign material sufficient to bring the level up to slightly below 3 percent. Then he should add enough barrels of water to bring the moisture up to the maximum level.

Then the buyer can clean the beans, remove the foreign material, dry them down to a moisture content where they will keep, put them in storage. When he sells he can add the foreign material, add the water, pass them on to the processor.

Silly, isn't it? But how else can a good business man do business under the present standards?

Then too, when an occasional buyer comes along and wants premium quality soybeans, offers a price commensurate with the quality, all the handler need do is run the beans out of the bin into the buyer's car or truck! In effect, it means starting with good quality soybeans, adding water and junk to bring them down to Federal standards or the level at which the buyer specifies he will pay.

Basic fact still remains that to the processor the best soybean is the cheapest soybean. Why are we saddled with the present grading system? When it subsidizes poor quality? Are we still not due for a change?

Progress in the State of Illinois

At this writing it appears that the people of the nation's largest soybean producing state will at last be able to buy their margarine, made from soybean oil, ready to use. Only minor details of difference between the two houses of the legislature need to be worked out before the bills go to the governor for signature.

Illinois is a major consumer state. It imports large quantities of table spreads. It is the largest manufacturer of margarine in the nation. A new multi-million-dollar edible oil refinery and margarine plant are now being constructed downstate, to add to the present capacity.

The producers of soybeans, the processors of soybeans, the housewives and the consumers in general have asserted themselves, and the statutes are being changed accordingly. Products of Illinois farms can now be consumed within the borders of the state. Housewives will get the products they desire.

The Illinois legislation again demonstrates that progress can not be stopped. In this case everyone benefits—no one loses. Well-directed efforts are bearing fruit. The trend of events in Illinois in its joining the parade toward free sale of farm commodities is heartening to the folks in the few states remaining on the list retaining outmoded restrictions. Ohio led the repeal parade in the Midwest soybean area. Then Michigan followed. Indiana had no restrictions. Missouri joined the list. Now Illinois falls in line. What state will be next?

You Can Look for a Squeeze

Maybe we are wrong. But unless we are there are going to be some surprised people during the summer months when they try to buy soybeans to keep plants operating. We have consistently felt that the 1950 crop reports were overly optimistic, that there never were 291 million bushels of soybeans harvested.

Many processors now tell us it is almost impossible to buy beans. We doubt if growers and handlers are holding for higher prices, since soybean prices were at the ceilings for weeks. There is always the tendency to hold beans until after the planting season, then market any remainder not sold for seed purposes. There will be some of that in 1951.

But we are guessing that when the June and July marketings have been completed the available soybeans will be several million bushels short of the 291 million figure quoted last January. We don't believe there ever were that many soybeans, and we are even more convinced of it after talking with growers and handlers in Iowa, Illinois, Indiana, Ohio, Missouri and Minnesota. No one seems to know where to find those soybeans that are supposed to be in storage. If we are right, then there will be a severe squeeze on soybeans at the end of the processing season.

Of course, we could be wrong. What do you think?

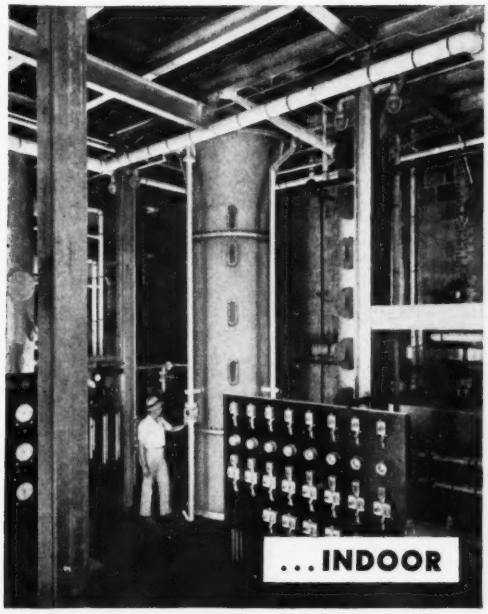
Make Your Reservations Now

Dates and arrangements for the 31st annual convention of the American Soybean Association have now been completed, as explained elsewhere in this issue.

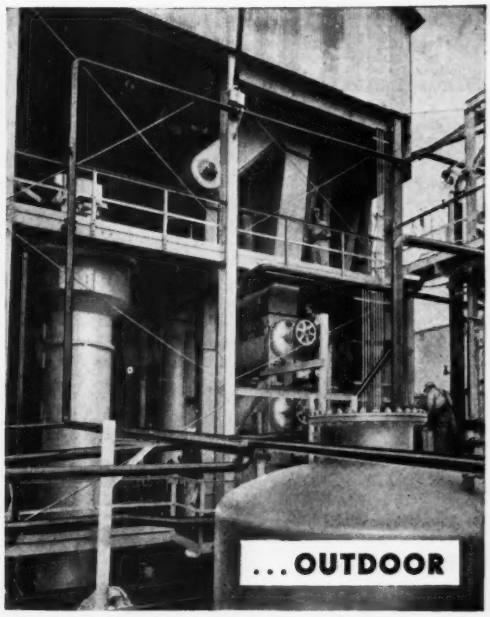
It is not too early now to place a RED CIRCLE around the dates of Sept. 6, 7 and 8.

Two days of formal program will be held at the Hotel Fort Des Moines in the city of Des Moines. One day will be devoted to a field day at Iowa State College. Facilities and personnel at the college have been engaged, arrangements made for a bang-up visit.

Make plans now to be on hand.



Soy bean oil extraction plant located in Tennessee



Rice bran oil extraction plant in Southern Texas

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Recognized as a pioneer in the solvent extraction field, Allis-Chalmers was the *first* manufacturer in the nation to provide American-made equipment to American mills for the continuous solvent extraction of soybean, cottonseed, corn germ, and rice bran oils. With this experience, A-C has gained a merited position as an authority on solvent extraction equipment and techniques.

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It is an established fact that continuous solvent extraction equipment *pays for itself* in a few short years . . . by recovering 4 to 7 per cent *more* vegetable oil than can be obtained by screw press or hydraulic methods.

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Pioneers in the Field of Continuous Solvent Extraction

ACTIVITIES OF YOUR ASSOCIATION

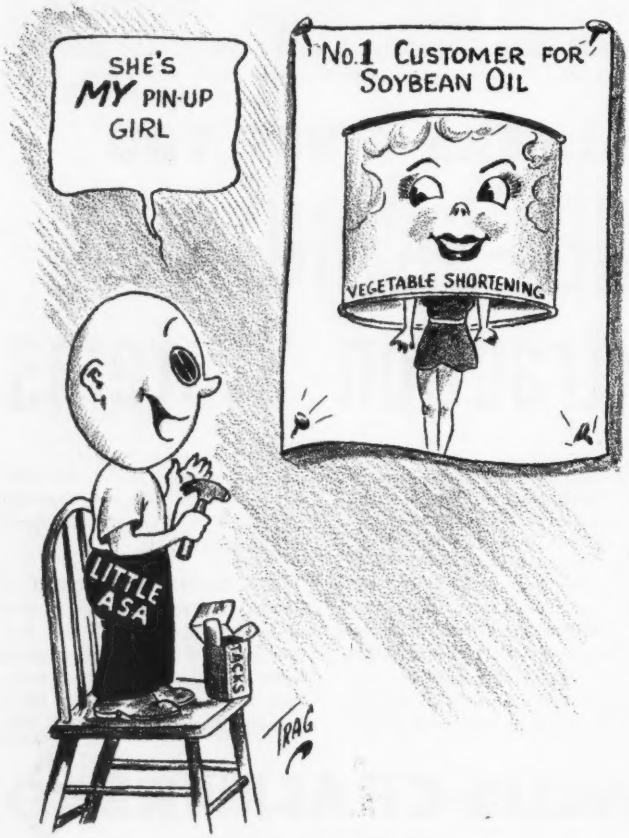
Sees Domestic Fats Used Solely

"Domestically produced fats and oils have now been used exclusively in the production of margarine over a period of years with increasing consumer acceptance," stated Geo. M. Strayer, secretary-treasurer of the American Soybean Association, in addressing the annual meeting of the National Association of Margarine Manufacturers at Hot Springs, Va., May 25.

"Increased knowledge and greater technical skills have enabled margarine producers to market a product made exclusively from domestic oils that compares favorably with that produced any place from any other product," Strayer continued.

"The producers of soybeans throughout the United States, as well as the producers of cottonseed, peanuts, corn and all other oilseed crops, have great faith that as we proceed in the postwar era domestic fats and oils will continue to be used exclusively," he continued. Great progress has been made in the removal of legislative restrictions on the states as well as the federal level, he pointed out, and that progress has come about through the joint efforts of all groups of vegetable oil producers and processors in the country. Continued progress can be expected in that direction, Strayer predicted, but only so long as the manufacturers of margarine use the products of American farms in their products.

About 100 representatives of a high proportion of all margarine manufacturers in the nation were present for the meeting. It was in charge of L. C. B. Young, chairman of the board of directors; Robert Spears, president; and Siert Riepma, executive vice president.



A Popular Gal with Us.

Cottonseed Meeting

Members of the National Cottonseed Products Association elected J. H. Bryson of Dothan, Ala., as president at the final session of their 55th annual convention at the Palm Beach Fla., Biltmore Hotel, May 15.

He succeeds W. D. Lowe of Jackson, Miss., as head of the national cottonseed crushing group.

Since 1923, Bryson has been president of the Dothan Oil Mill Co. which now operates two crushing plants, one peanut shelling plant and an edible oil refinery.

Reports on association activities were made by T. H. Gregory, Memphis, executive vice president; A. L. Ward, Dallas, educational director; and S. M. Harmon, Memphis, secretary-treasurer.

Representing the soybean industry at the meeting was Geo. M. Strayer, secretary-treasurer of the American Soybean Association. Strayer spoke briefly at the annual business meeting extending greetings from the soybean industry and stressing the importance of cooperation between the two industries.

While competitive in the oil and meal markets, Strayer pointed out, the problems of the two industries are identical from the standpoint of market promotion and expanded usage. Both industries will gain through cooperation on promotional, legislative and educational programs. Oil uses such as shortenings, margarine and salad oils are shared by both industries, and the livestock feeding industry continues as the major market for both meals.

Both fields offer continued expansion, Strayer pointed out, and both industries will profit by such expansion.

Raise Export Rate

The increase in rate of export soybeans shipped from southeast Missouri and Arkansas to New Orleans proposed by Southwest Line railroads went into effect May 28 on order of the Interstate Commerce Commission.

The rate, which was fought by the American Soybean Association and

Clean, Whole Soybeans from America's Favorite Combine

Pulled and powered by 2-plow tractors such as the Case "VAC" shown here, the low-cost Model "F-2" Combine harvests all small grains and dozens of other crops from tiny hard-to-get grass and clover seeds to big, fragile beans.

The dollar value of a soybean harvest is enhanced by its freedom from trash and crackage. Soybean producers who use the six-foot Case Model "A" Combine are dollars ahead because their crops come from the combine exceptionally clean and whole, with the highest possible amount delivered to bag or bin.

Case users are more dollars ahead because the Case Model "A" works fast and dependably, with little time out for adjustment and little outlay for repair. Case Combines are built in the 109-year-old Case tradition of making every part a bit better than might seem necessary. That is why Case Combines, like all Case machines, last long with small cost for upkeep. Its ability to do good, fast work at minimum expense and to keep going under difficult conditions has made the Case Model "A" truly America's favorite combine. Write for full information—or see the nearest Case dealer. J. I. Case Co., Dept. F-75, Racine, Wis.

CASE

9 AND 12-FOOT CASE COMBINES

Case builds both self-propelled and pull-type combines in these sizes, with choice of rub-bar or spike-tooth cylinders. All feature hydraulic header control, exceptionally seed-tight construction, long straw rack and exclusive Case "air-lift" cleaning.

interested producers and handlers in the area affected, is 25 cents per hundredweight, in addition to the 2 percent increase effective April 19, and is 5½ cents above the rate that had been prevailing in the area.

The rate increase was suspended last Sept. 14 by ICC pending further investigation. The order upholding the increase asked by the railroads was issued May 9 and was announced by W. P. Bartels, ICC secretary.

The Southwest Line railroads cancelled the 19½-cent export rate on soybeans in the Missouri-Arkansas area in May 1950, the regular freight rate of 28½ cents to apply. When this increase was denied by ICC, the roads then proposed the 25-cent rate.

Both increases were vigorously opposed by the American Soybean Association and producers and handlers in the area. They pointed out in hearings before ICC that the new soybean industry is developing in the Delta area due to the benefit of favorable freight rates. They claimed that an increase in the rate would mean that other producing areas will get the export business, since the higher rate will place the Delta in a less favorable competitive position.

The Southern Freight Association has also proposed an increase in export freight rates on soybeans shipped east of the Mississippi River to New Orleans. States affected would be Illinois, Kentucky, Tennessee, Mississippi, and Louisiana.

The present 19½-cent rate would be increased to 21 cents, and the 21-cent rate would be boosted to 24 cents in the areas east of the Mississippi River.

These rate increases have been held in abeyance pending the ICC decision on the west side rates.

Illinois Repeal Bill

Only one small hurdle remained to the governor's signature of bills permitting the manufacture and sale of yellow margarine in Illinois as the Digest went to press. That was concurrence by the House in Senate amendments to the margarine bills. Vote on concurrence was to take place June 5.

House bills 2, 51 and 52 passed the Illinois Senate May 29. They would permit the manufacture and sale of yellow margarine and its sale in restaurants and would prohibit the manufacture of margarine containing any foreign oil.

Senate amendment to be concurred in by the House would impose a fine of $500 on any restaurant that serves margarine without proper identification.

Report on Campaign

A report of the Association's "More Bushels, Not Ruined Acres in 1951" campaign now completed has been issued to processors, ASA program backers, inoculation and seed treatment manufacturers and others interested in the campaign.

Copies of the report of this campaign are available. A postcard addressed to the American Soybean Association, Hudson, Iowa, will bring you a copy.

GROWERS

Success with Flaming

"We consider flame cultivation the most important factor in our soybean cultivation," says W. M. Scott, Scott Plantations, Tallulah, La.

"It is the means of clean cultivation, increases combine facilities and improves the grade of beans," according to Scott.

Scott Plantations flamed its entire crop, except for 50 acres, in 1950. Production was 41.6 bushels per acre on 1,140 acres.

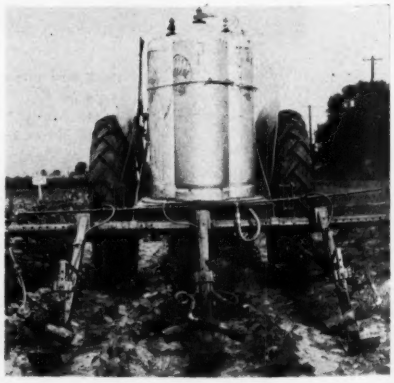
"In order to secure the best results cultivation must be uniformly done and the plants flamed at a minimum height," he says. "We start to flame when the beans are 12 to 14 inches high and approximately three-sixteenths of an inch in diameter. Our first flaming is done at 23 to 25 pounds pressure. The second and third applications are made at three-day intervals with pressure 28 to 30 pounds. This should clean the fields of all grass and weeds.

Experiments in flaming soybeans at the Delta Branch Experiment Station, Stoneville, Miss., over a number of years have not been too successful. The beans apparently withstand the flame well, but flaming has always reduced the yield, according to William E. Meek, senior agricultural engineer at the station.

The station has developed a new style flat-type burner for flame cultivation that may make it possible to use flame in soybeans without a reduction in yield, according to Meek.

So far the Delta station is not making any recommendations for use of flame on soybeans.

Flame cultivator



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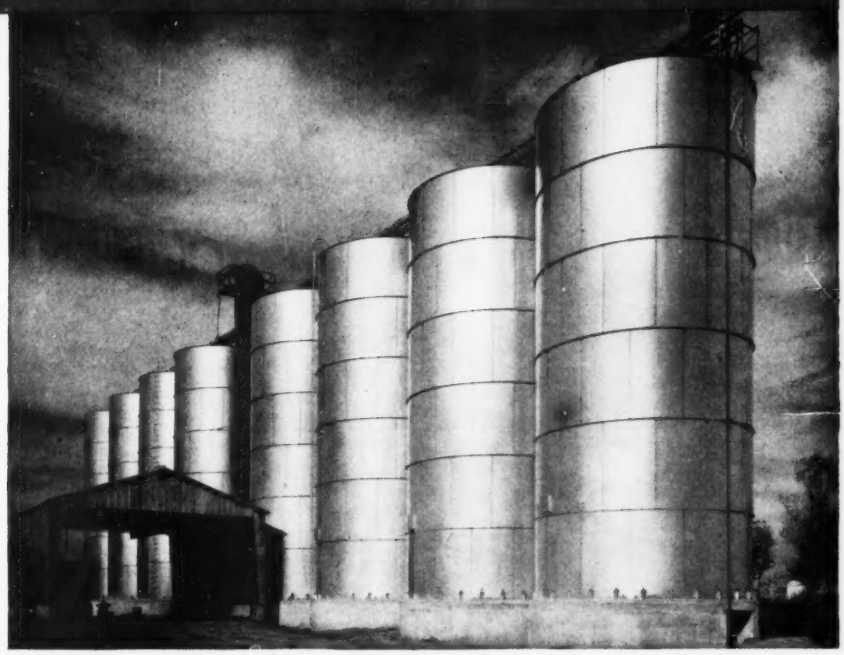

Butler Bolted Steel Grain Tanks at Kewanee, Mo., provide 112,800 bushels storage capacity.

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Butler Bolted Steel Grain Tanks Have These Advantages . . .

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- Tight construction provides for more effective fumigation with less fumigants

More and more elevator operators in grain-producing areas all over the country have discovered that the use of Butler Bolted Steel Grain Tanks is the modern, safe way to protect their soybeans and other grains. The confidence that these operators place in Butler tanks is the result of proved performance on the job.

Butler storage has been proved safe . . . proved strong . . . proved weathertight. Tight construction allows more effective fumigation. Heavy gage, precision-made steel sheets bolt tightly together for ample strength against load pressures imposed by stored grain, wind and weather.

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The Iowa Capitol building dominates the city of Des Moines from a hill in the eastern part.

Des Moines Host to ASA's 31st

After eight years, the American Soybean Association comes back to Iowa for a convention—its 31st.

The last Iowa convention was held in Cedar Rapids in 1943, during the war. This year the convention will be in the state capital, Des Moines, Sept. 6, 7 and 8.

Convention headquarters will be Hotel Fort Des Moines.

Details of the program including events for the ladies and the field day will be announced at a later date. It will include some of the nation's outstanding speakers on soybean subjects.

Annual banquet will be Friday evening, Sept. 7. It will be followed by a field trip to Iowa State College, one of the nation's agricultural research centers on Saturday, Sept. 8. You will be taken to Iowa State College agronomy farm (shown on front cover) where a large number of special plantings of soybeans are being made for the occasion; and to the college's swine nutritional research farm where some of the nation's outstanding experiments using soybean oil meal are being carried on. Some of the pioneer work with vitamin B-12 and antibiotics in swine feeding was done there.

Corn and Hogs

In coming to Iowa you come to a state where agriculture is the leading industry and everybody is farm minded. More land is under cultivation here than any place else in the U. S. And we Iowans brag that no other place on the globe has so large an area of fertile soil and produces so much food. In fact, three-fourths of the No. 1 land in the nation lies within a 250-mile radius of the center of Iowa!

The state's chief income is from corn and hogs, and she leads all other states in both. But soybeans have come up fast and now rank next to corn as a cash crop.

Iowa is second in the U. S. in soybean production, a position she has held for most of a decade. The state's annual crop is exceeded only by that of Illinois. The heaviest production is in the comparatively level cash grain area in the north central part of the state. There are 35 soybean processing plants in the state. Iowa is second only to Illinois in the number of plants and the volume of beans crushed. Two of the larger plants are in Des Moines.

Iowa is not particularly famed for its scenery but many are delighted with the soft rolling contours, the hills and valleys checkered with farmsteads and fields made famous by Grant Wood and other painters.

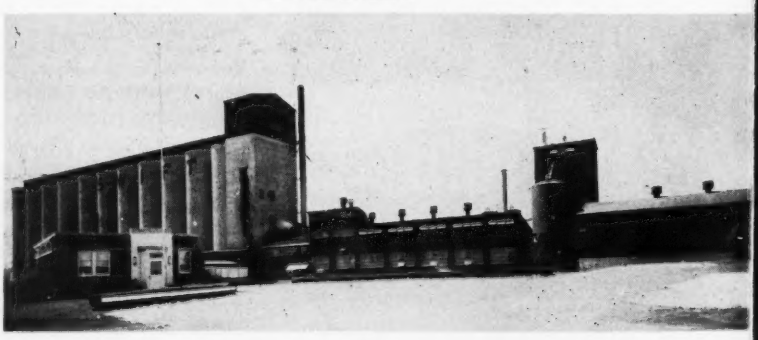
The state has room for 75 state parks and preserves, some of them tracts of 2,000 acres or more. One or more are easily accessible to any part of the state. More than 2½ million people visit them each year to swim, fish, boat, hike or just plain loaf. Iowa has two important large lake areas, Okoboji and Spirit Lake in the northwest and Clear Lake in the north central part.

The Convention City

Des Moines can be reached readily by highway, train or plane. Highway 6 runs through Des Moines east and west, and 65 and 69 north and south.

It is served by the main lines of the Rock Island and the Great Western railways. Des Moines is one of the main stops east and west on Unit-

Big Swift & Co. soybean processing plant, one of two in Des Moines. Iowa ranks second in U. S. in soybean processing.



A modern Iowa farm, built by livestock, corn and soybeans.

Member of eight-horse hitch at Iowa State Fair, one of the world's largest agricultural expositions.

ed Air Lines, and on the north and south lines of Mid-Continent Air Lines.

You will find Des Moines a city of about a quarter million people, and one of diversified activities. Manufacturing, jobbing, retailing, banking, insurance and publishing are all of great importance there.

Des Moines manufacturing plants produce over 500 different products valued at more than 340 million dollars annually. The city is one of the leading publishing centers in the United States. There are few homes in the Midwest that do not have at least one Des Moines publication. They include the Des Moines Register and Tribune, Meredith Publishing Co., home of Better Homes and Gardens and Successful Farming, and Wallaces' Farmer and Iowa Homestead. The magazines Look and Quick also have publication offices in Des Moines.

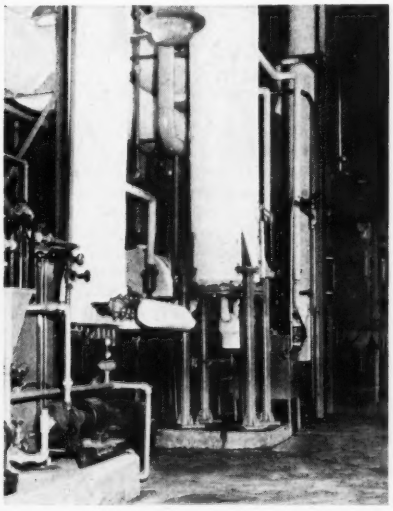
A visit to Meredith Publishing Co., largest publishing plant under one roof, will be part of the activities for the ladies this year.

The Iowa State Fair, one of the world's largest agricultural expositions, and made famous by Phil Stong's book, State Fair, is held each year the last week in August. It will be just a week before the ASA convention this year.

It is not too early to be making your hotel reservations for the convention. Make them direct with Hotel Fort Des Moines. After the headquarters hotel is filled desirable accommodations will be made available to you at neighboring hotels.

Exhibit booths will be available to firms serving the industry. A large number already have been reserved at this writing.

Don't forget the dates, Sept. 4, 7 and 8



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Soybeans Grew BIG in Missouri

Harvesting soybeans in southeast Missouri.

They were that state's leading cash crop in 1950

By W. C. ETHERIDGE
Chairman Department of Field Crops
University of Missouri

THE MOST EXCITING farm news in many Missouri seasons was the official announcement last December by the United States Department of Agriculture that our soybean crop in 1950 was the largest we had ever grown, that it exceeded by 52 percent our 1949 crop in total bushels harvested, *and that it led all Missouri crops of the year in direct money returns.*

The bare facts of this story are told best in figures. There were 1,191,000 soybean acres, yielding an average of 23 bushels for a total harvest of 27,393,000 bushels. For good measure there were 39,000 tons of hay on 25,000 additional acres. On the basis of average price for the seed all season, the total return was $61,634,000, not counting the value of the separate hay crop. This was the highest cash income received for any Missouri crop last year, on a state-wide scale, roundly exceeding the returns from cotton by 3 millions dollars and the income from wheat by 13 million.

Back of this recital of statistics is another part of the story. It is the part that tells how and why soybeans, once a vigorous secondary crop, suddenly moved to the top in cash returns.

The genesis of the crop in Missouri was in 1917 when the Missouri Agricultural Experiment Station began a systematic study of soybean varieties, including their composition, yields, and natural and economic adaptations. Practical methods for farm production were developed. The promotion of soybeans as a hay crop was begun in certain areas needing leguminous feed but failing on weak land to produce the wanted supply from alfalfa and clovers. All of this was and still is routine procedure in the building of a new crop. The simple questions in such quality and utility analysis are: What is your plant good for? Where will it grow best? How much will it yield? Testing, testing, testing—always the principal means of proof in plant studies.

Hay Crop

By the late twenties soybeans grown for hay on some 200,000 acres had reached the status of a minor crop in Missouri. Meanwhile the Missouri Station, knowing some limitations of soybeans as a hay crop, was breeding new varieties for seed production, was improving old ones, and was bringing to Missouri the best varieties bred in other states. But prices of commercial soybean seed were low and unprofitable to Missouri growers; consequently there was only small production for industrial purposes. Soybean hay, on the contrary, reliable and easily grown, found a valuable use for feed in many places. The Missouri program of breeding new varieties of soybeans for the special production of grain was kept in progress only by reasoning that a plant so laden with seeds rich in protein and in oil must have a great future.

While the development of soybeans as a Missouri crop was still in the "hay stage," there arose from shallow thinking a strong prejudice, often stimulated by official statements, that soybean production was ruinous to the land. The notion was based on the solid fact that the loosening of the soil by soybean roots does increase soil erodibility. It was not to be flatly contradicted, since the roots of all leguminous plants have a similar effect, but means for reducing to a comparative minimum such damage by the soybean crop could be found, and were.

Soil Fright Factor

We now know that soybean production, correctly managed, holds no special threat to soil fertility as a whole. If the plowing and planting are contoured on erodible slopes, if the crop is combine-harvested and if the bean ground is quickly seeded with fall grain correctly fertilized, the reduction of fertility by crop growth and soil erosion is nothing to be afraid of. On the basis of these simple measures we may indeed reasonably claim a soil benefit from soybean production. In combine-harvesting only the seed is removed from the land, leaving a heavy organic residue containing considerable nitrogen. If the soybean cake (meal) from the processing of the seed, or its fertilizing equivalent, is returned to the field, through the feeding of livestock or by commercial application, the oil in the seed will be the only fraction of the whole crop that is finally taken away—and there is no fertility in the oil.

It would seem that a fair consideration of the foregoing simplicities should remove the soil fright factor

Last Year

from soybean farming. Obviously the question of injury or benefit to the soil pivots on correct mechanical procedure and adequate fertility treatment. There is nothing bad for the soil that common sense cannot cure, and growing recognition of this truth has contributed to the rapid spread of our Missouri soybean crop.

No Poor Land Crop

Another aid to enlargement has been the dispelling of the once lively fiction that soybeans are best adapted to poor land. Perhaps the fashion of calling soybeans a "poor land crop" began with our earlier custom of growing this legume for thrifty yields of hay on land that couldn't support alfalfa and clover, plants which require high fertility. The soybean crop, now taking its share of the better fields, everywhere produces in general relation to the strength of the land.

Improved varieties, the extension of the crop to better lands, the wider use of fertilizers, and the frequency of good seasons have increased the acre yield and thereby brightened the expansion of acreage.

But large yields without high prices are a discouraging climax, and the high prices do you no good when you have not much to sell. The farmer will produce abundantly, or try to, if prospective prices indicate good profits. It is to be said with much emphasis that the rising level of prices through the period 1940-50 has been the main cause of the recent increase in the Missouri soybean acreage and in the acre yield. The employment of various efficiencies for high yields—better varieties, soil treatments, improved cultural methods—becomes attractive only when prices for the commodity hold fair promise of high net returns.

Dotted areas are where most Missouri soybeans are grown.

Three instrumentalities—the researcher, the producer, and the processor—are joined in an effort for the continuing development of the soybean crop. This shining example of effective coordination is represented by the agricultural experiment stations, the soybean farmers, and the soybean processing industry. The wisdom of it is attested by the growing success of all parties engaged.

Another increase in the crop this year is predicted by official surveys and practical observations. Perhaps many times in the years to come soybeans will again lead other Missouri crops in cash returns.

(From speech before Tri-State Processor meeting in Minneapolis.)

OILSEEDS IN SPAIN

Spanish production of oilseeds, other than olives, amounted to about 24,650 short tons in 1950, reports Burl Stugard, Agricultural Attache, American Embassy, Madrid. There is little interest in producing oilseed crops and the small output was limited to 8,600 tons of cottonseed, 12,700 of peanuts, 650 of flaxseed, and 1,350 tons each of hempseed and sunflower seed.

Soybean oil imports of 13,720 tons, all from the United States, were less by one-third than the 1949 volume. This was probably due to lack of dollar exchange and to the olive oil carry-over from the large 1949-50 crop.

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World Fats and Oils Situation

By ROBERT M. WALSH

Presented at the Tri-State Soybean Conference at Urbana, Ill., Mar. 22

THE PRESENT FATS and oils supply situation for the United States is good. In fact, compared with 10 years ago at the outset of World War II, it is excellent. During the five-year period preceding that war this country produced fats and oils at the rate of 8.7 billion pounds annually. Then we were a net importer of fats and oils to the extent of 1.5 billion pounds annually. Today we are producing at a rate of about 12 billion pounds annually and are a net exporter to the extent of nearly 1 billion pounds a year. *In other words, we have changed from a net importing country to a net exporting country despite increased domestic requirements.*

Soybeans, of course, have played a major role in this transition. Prior to World War II, soybeans were a comparatively minor crop in the United States. Although an average of about 10 million acres were planted annually only about 40 percent of this acreage was harvested for beans. Yields from harvested acreage averaged about 19 bushels per acre and production of beans amounted to about 77 million bushels.

The soybean industry has come a long way since then. Planted acreage has increased and in recent years over 80 percent of the acreage planted has been harvested for beans. With improved varieties and production methods, soybean yields in recent years have averaged almost 22 bushels per acre. I am not forgetting, of course, that weather has played an important part in these high yields, but the fact remains that it hasn't been the entire cause.

Insofar as supply is concerned, the edible fats and oils situation this crop year is about the same as a year ago when a record production was established. Production of butter will be down, but this decrease will be largely offset by increased lard production. The record soybean crop of 1950 and a very high yielding peanut crop will approximately offset the one-third reduction in cottonseed oil. All of this large production is needed to meet the continuing strong demand for edible fats and oils and oilseeds, both for domestic use and export.

And now let me say some things about the world fats and oils situation.

World production of fats in 1950 is reported at nearly 46 billion pounds, a slight increase over the 1935-39 level. A further gain may be made in 1951 but it will not be spectacular. Production of fats has not kept pace with population growth.

World Exports

World exports of fats are still running below prewar despite the emergence of the United States as a major export supplier. Other export supplying areas such as India and Ceylon, Africa, and South America are all consuming more fats than formerly, with little increase in production. Output in Indonesia continues below prewar. And Manchuria is still a highly doubtful source of supply; more so than a year ago when relatively peaceful conditions ruled in Korea. The one bright spot is the Philippines where a new record output may be reached this year.

Western Europe, the major importing area for fats and oils, has made strenuous efforts in recent years to increase production of vegetable oilseeds, principally rapeseed. An increase in output of around 400 million pounds of vegetable oil other than olive oil has been achieved. But this is scarcely more than a drop in the bucket considering the 15 billion to 16 billion-pound annual requirement. European production of animal fats is still more than a billion pounds below the level of the 1930's. And production of olive oil in the current season is about 600 million pounds below prewar. On balance, the domestic production of fats and oils in Western Europe is still 5 to 10 percent less than in the late 1930's.

The rate of population increase in Western Europe probably will exceed any future increase in production of fats. At present, fully 50 percent of the fats consumed in Western Europe is imported. As time goes on, Europe is likely to become increasingly dependent on imports of fats and oils. Hence the efforts that we have seen to develop increased colonial supplies. The British in East Africa have been notably unsuccessful in their attempt to promote peanut and sunflower production. The French are making slow but surer progress in West Africa, while in the Belgian Congo successful progress is being made in developing palm plantations.

Dollar Troubles

The dollar exchange difficulties of a year ago have become less pressing, partly because of heavy purchases in recent months of tin, rubber, and other strategic materials for the U. S. stockpile. Nevertheless, European buying, whether by barter arrangements or on a cash settlement basis, is directed first to non-dollar sources of supply. Export resources in such areas are not sufficient to meet all of Western Europe's needs. Hence the demand for imports from the United States continues relatively strong.

That demand at the moment is stronger than it would otherwise be because of the short supply of olive oil from the Mediterranean basin this season, and because of the small outrun of peanuts in British and French West Africa. Spain, Italy, and Greece, among others, require more U. S. soybeans and soybean oil this season because of the shortage of olive oil. And perhaps less directly the shortage of African peanuts also is reflected in European or-

Europe is likely to become increasingly dependent on imports.

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*The first of a series of patent applications covering the Exsolex process has been officially allowed and U. S. Patent 2,551,254 has been granted by the patent office. Further applications are pending.

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ders for oilseeds and oils in the United States.

Another factor which contributes to a strong export demand is the virtual embargo of Manchurian oilseeds to Japan. And industrial activity and the basic demand for fats and oils is at a high tempo throughout the world.

Reflecting the basically strong demand, domestic disappearance of edible fats and oils during the last quarter of 1950 when prices were advancing was at a rate of about 10 percent above the corresponding quarter in 1949. As a result of the price freeze of Jan. 26 and the subsequent establishing of definite ceiling prices for cottonseed and soybean oils, domestic disappearance may settle down to a more nearly normal pattern.

In view of the unsettled world situation and the strong demand, both at home and abroad, the Department of Agriculture has asked for continued high production of fats and oils. A 1951 production guide of 13 million acres has been established for soybeans to be harvested for beans, and a production guide of 4 million planted acres has been set for flaxseed.

Drying Oils

In general, the drying oil situation is good, and yet there are certain aspects of it which are not good. In the first place, we have an abundant supply of linseed oil and also flaxseed, judging from the Jan. 1 stock report. During normal times, our stocks would be considered excessive, but in this period of emergency large stocks are desirable indeed.

Our supply situation with respect to some other types of drying oils is not so good as with linseed oil. Castor oil, which is used to a considerable extent as a drying oil, has become of increasing importance in other uses during the past several years. Prior to World War II, this country used only about 60 million pounds of castor oil annually as compared with almost 140 million used yearly during and since World War II.

Due to the strategic importance of castor oil to our industrial economy and the defense program, the Department has inaugurated a production program for castor beans in 1951. The states in which this program will apply are Oklahoma, Texas, Arizona and California. There is a definite interest on the part of farmers in these states in growing castor. In fact, there are not enough seeds of adapted varieties to plant the acreage that apparently could and would be devoted to castor if sufficient seed were available.

A meeting of the Industrial Oils Advisory Committee was held on Mar. 12 to discuss the castor and tung oil supply situation. The Committee recommended a system of use control for castor oil, but recommended against any domestic controls at this time for tung and oiticica oils. We expect to issue a control order for castor oil in the near future.

Soap Fats

Supplies of soap fats, referring primarily to inedible tallow and grease, will be larger this year than last. Prior to the Korean fighting, tallow and grease were a drug on the market. Prime tallow was selling for only about 5 cents per pound, Chicago. Largely as a result of these low prices in relation to world prices for fats and oils, a strong export demand developed. Exports of tallow and grease from June through October averaged about 60 million pounds per month. During November, December and January, exports were at a more nearly normal rate of nearly 35 million pounds monthly.

During this period of national emergency, the fats and oils industry as well as most other similar industries will be faced with materials shortages and other similar problems. Many of these problems have already arisen. For example, steel drums are in very short supply as many of you undoubtedly realize. Nickel for use in catalysts, sulphuric acid, stainless steel tubing, aluminum, tin plate and many other items are also in short supply. In the face of shortages it is important that all phases of the fats and oils industry make the best possible use of materials and facilities which are now on hand and substitute less critical materials where possible. However, in those cases where materials are absolutely essential and cannot be obtained through existing procedures, we in the Fats and Oils Branch would like to know about it. It is only in this way that the Department will be able to present such problems to the National Production Authority for assistance. I would like to point out, however, that little can be done on an individual basis for such items as steel drums which are short throughout the industry. In cases of this type the Department efforts are directed to a solution of the over-all problem. Some easing of the situation in obtaining replacement parts and in making repairs presumably should result from the recent order permitting use of DO 97 priorities.

I would like to mention the question of accelerated depreciation for new or expanded facilities as provided in the Defense Production Act. As you know, this Act permits accelerated depreciation on new or expanded facilities considered essential to the defense program. We have received numerous inquiries regarding this provision as related to the fats and oils industry and are receiving a few formal requests for this privilege. In general, the processing facilities of the fats and oils industry appear adequate to fulfill demands for fats and oils and related products. However, there may be some fields in which expansion may be required. In those instances, where expansion is considered necessary in connection with the defense program, consideration will be given by the Department to recommending approval of accelerated depreciation for purposes of tax amortization. However, we do not see either the need nor justification for any wholesale approval of requests for this privilege in connection with modernization or expansion of existing facilities.

USDA and Controls

There is one other point which I would like to discuss briefly before closing. This is the question of controls, both of price and otherwise. The Department has no official function insofar as price controls are concerned except to develop minimum levels at which price ceilings can be established for agricultural commodities.

But the Department does have the responsibility for establishing and administering other types of controls, such as use and export controls, for all foods including fats and oils and oilseeds. It has often been said that controls beget controls and certainly there is ample basis for such a statement. Nevertheless, we believe that use, inventory, and export controls should be avoided whenever possible. I can assure you though that should controls appear necessary, we will call meetings of appropriate industry advisory committees for their recommendations.

—sbd—

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Nutritional Value of Soybean Proteins

THE PROCESSOR'S RESPONSIBILITIES

By FRED H. HAFNER

The following topic was presented by Fred H. Hafner, General Mills, Inc. during a panel discussion conducted at the Third Annual Tri-State Soybean Processor's Conference on March 8, 9, 1951 in Minneapolis, Minn.

SOYBEAN OIL MEAL is one of the products obtained during the course of processing soybeans for oil. I speak of it as a product of soybeans and not as a by-product inasmuch as approximately 80 percent of the original soybean is recovered as meal. Moreover, the dollar and cents value of the meal obtained from a bushel of soybeans, based on current markets and average yields, is 90 percent of the dollar-and-cents value of the oil. This puts it practically on a par with soybean oil as far as monetary return to the processor is concerned.

As to their value in our national economy, both soybean oil meal and soybean oil occupy important positions in their respective fields of use.

Consider the increase of soybean oil meal production during the past 30 years. In 1920 production was too small to record, practically all the soybeans available at the time being used for seed. By 1930 production had increased to about 100,000 tons, which is the current annual meal output of our Belmond plant. Production was principally of the hydraulic-and-expeller type. Only a few feed manufacturers were using soybean oil meal as a regular ingredient of their formulas at that time, and those who were included it at low levels probably not over 5 percent of the total feed.

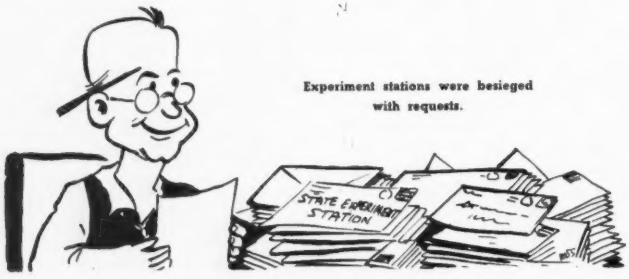
During the long depression years after 1930, soybean processing operations expanded until by 1940 production had increased to 1½ million tons, 15 times the production of 1930. Those who were connected with merchandising soybean oil meal in 1940 will recall the difficulty experienced in finding buyers for the heavy production of that year. Meal prices for the year averaged less than $25 per ton bulk Decatur basis. Extraction-type meal, which accounted for about 20 percent of the total soybean oil meal production in 1940, was particularly difficult to move inasmuch as it had not as yet gained wide acceptance by the feed trade.

It seemed at the time that the soybean industry had expanded to its limit. An increase in soybean oil meal production surely would result in a surplus supply of meal which would tend to keep the market depressed and result in thin margins for processors.

This would have a tendency to discourage further expansion of both processing facilities and soybean acreage. Moreover, lack of general acceptance of soybean oil by both edible and industrial users lent further disheartening pressure to the situation. The soybean industry was indeed at a critical period in its existence.

Impact of War

Then came World War II. Nonfat dried milk solids were excluded from use in feeds by government order. Meat scraps and tankage became relatively scarce. The government asked for increased production of meat animals and poultry. Experiment stations that had been busily engaged in vitamin research suddenly were besieged with requests for recommendations as to what proteins could be used to replace milk powder and spare meat scraps and tankage in their various formulas. Researchers were mobilized both at universities and in industry to study the protein problem.



Experiment stations were besieged with requests.

Three vegetable proteins which were available in quantity were studied intensely for possible extended use as replacements of animal protein, viz. cottonseed meal, linseed meal, and soybean oil meal. The cottonseed meals and linseed meals available at that time had properties which precluded their use in poultry rations at levels above 5 percent of the total ration. Therefore their use to relieve the acute protein shortage was restricted to livestock. Even if linseed meal and cottonseed meal had been shown to have high animal protein replacement values there was insufficient cottonseed meal and linseed meal available to take care of the demand.

Soybean oil meal, the only product that had not been thoroughly exploited, came rapidly to the forefront. Within a year the level of soybean oil meal in feed mixers' formulas began to increase. As the riboflavin, calcium, phosphorus, methionine and other deficiencies of soybean oil meal were determined and compensated for the value of soybean oil meal as a source of high quality protein for use in animal feeds became fully recognized. With the endorsement of experiment stations and universities all over the country, demand for soybean oil meal increased until in 1950 4½ million tons of soybean oil meal were produced and consumed.

Used with APF

Now as we prepare our estimate for 1951 we foresee a production of 5½ million tons, the largest production in our history—and every pound needed to meet the ever increasing demand. Higher levels are used in conjunction with APF sources to replace in part or completely more expensive meat proteins, and to counteract the shortage of cottonseed meal resulting from a short cotton crop.

Soybean oil meal has come a long way since its modest beginning 30 years ago. Research and World War II played an important part in giving our American feed industry an abundant and cheap source of high quality protein for use in every type of animal feed. Last crop year

(1949-50) production of oilseed meals totaled about 8 million tons; this crop year (1950-51) preliminary estimates indicate production will be about the same, possibly slightly greater. The percent of the total production contributed by each of the principal oilseed meals is as follows:

	1949-1950	1950-1951 est.
Soybean oil meal	57.0%	67.0%
Cottonseed meal	31.0%	21.5%
Linseed meal	8.6%	8.0%
Peanut meal } Copra meal }	3.4%	3.5%

The total number of animal units on farms in the U.S. is expected to be slightly higher this year than last so that generally speaking the vegetable protein concentrate supply situation is relatively unchanged from a year ago. However, before the end of this crop year many factors could enter into the picture and completely alter any predictions that might be made at this time.

Feed Industry

Let us leave the protein supply situation and review some of the responsibilities that processors have to the feed industry. First of all we are well aware that great strides have been made in developing marketable soybean oil meals. Both the extraction-type and mechanically-pressed type soybean oil meals are now generally accepted by the trade. The old battle among processors over the relative superiority of one type meal over another has all but disappeared and the decision is now pretty much a matter of customer preference. Both types of soybean oil meal are well established and it is this writer's prediction that both types will be available for many years to come.

Meanwhile every possible effort is being made to standardize both types of meals so that shipments of the same type of meal from different mills will possess similar appearances and properties. The National Soybean Processors Association has, through a collaborative study involving both member processors and formula feed manufacturers, singled out one sample of extracted soybean oil meal and one sample of mechanically-pressed soybean oil meal that received a majority approval during a recent impartial survey. The meals were judged on the basis of apparent color, granulation, dustiness, and general appearance.

Samples of each type of meal have been distributed to processors all over the country with the hope that, with these samples as guides, a greater degree of interplant uniformity can be achieved. We in the industry consider this a step toward fulfillment of one of our responsibilities to the feed industry.

Another responsibility of the processor is to maintain production within the specifications of the NSPA as outlined in the trading rules. These specifications cover moisture, fiber, and ash maximums, and protein and fat minimums. With a reasonable amount of laboratory supervision over production there is no reason why a processor cannot maintain every shipment within the liberal specification limits permitted by the trading rules.

In our own operations we check production at half hour intervals, 24 hours per day every day we operate. Tests include checks on moisture, color, dust, coarse matter and urease activity. In addition, during the day shift additional checks are made on moisture, protein, fat, fiber, ash, protein solubility index, urease activity, proteolytic inhibitor activity, and granulation. By means of these controls, rejections are eliminated, complaints are held to a minimum, quality is standardized, uniformity is maintained, and customers are satisfied.

Good production can be obtained and maintained only by careful and continuous laboratory supervision of the meal while it's being made. Laboratory control of production is another of the responsibilities of the processor to the feed industry.

Tests for Quality

At this point I wish to elaborate on some of the tests available for controlling the quality of soybean oil meal at the processing plant. Briefly they can be grouped into two categories: (1) physical tests; (2) chemical tests.

Under the heading of *physical tests* are included the following:

Color: Measured photometrically and expressed as percent of incident light reflected from the surface of the meal under standard conditions. A range of 36 percent to 39 percent for extracted meal is preferred by the trade. Value of this test depends on uniformity of grind.

Odor: Determined organoleptically. Should have cooked-bean odor.

Flavor: Determined organoleptically. Should not be raw, bitter nor burned.

Physical appearance: Determined by inspection. Hulls and coarse material should be inconspicuous as possible. All particles should have same degree of carmelization. Mottled meal should be avoided.

Dust content: Determined by inspection and analysis. Product should not be dusty. Fines (percent through No. 100 wire screen) should be kept below 3.0 percent in the extracted meal. Mechanically pressed meal which contains 3.5 percent or more fat, presents no dust problems.

Granulation: Determined by standard mechanical screening procedure. Daily granulation checks should be made in the range of 14 mesh, 16 mesh, 40 mesh, 60 mesh, 80 mesh, 100 mesh, and 200 mesh. Every attempt should be made to maintain the percentage distribution constant throughout this screen

Hold complaints to a minimum.

range. One hundred percent should pass a 14-mesh screen, not more than 3 percent a 100-mesh screen.

Moisture: Determined in Steinlite or similar rapid test device at ½ hour intervals; checked periodically during the day shift by precise laboratory oven technics. Careful control is essential to avoid excess moisture in shipments. Maximum moisture permitted at time of shipment is 12.0 percent. This maximum should be adhered to at any cost.

Under the heading of *chemical tests* are included the following:

Protein: Determined by usual Kjeldahl procedure. Protein, corrected to 12.0 percent moisture, should not be below guarantee.

Fat: Determined by extraction with an appropriate solvent. Residual oil is of more importance as a test of operating efficiency than as a test of quality.

Fiber: Determined by usual digestion procedure. Should not exceed 7.0 percent.

Ash: Determined by usual ignition procedure. Should not exceed 6.0 percent.

Protein solubility index: A determination of the percentage of total protein soluble in water under standard conditions. Raw extracted soybean flakes have a PSI of 90 percent or more. Overheated soybean oil meal has a PSI of 10 percent or less. A safe operating range seems to be 30 percent to 50 percent, to avoid protein damage due to overheating.

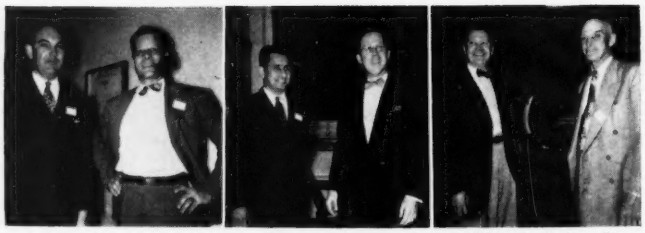
Urease Activity: Determined either colorimetrically, using an internal indicator or potentiometrically. Usually if the urease activity is negative after 15 minutes of test and positive after 60 minutes of test the meal is adjudged neither overcooked nor undercooked. Raw extracted soybean flakes produce a pH increase of 2.0, overheated soybean oil meals zero pH increase at one hour. A pH increase of 0.1 to 0.3 in one-half hour is recognized by some processors as an index for adequate but not excessive heat-treatment.

Thiamin: Determined either microbiologically or fluorometrically. Raw extracted soybean flakes are relatively high in thiamin content—over 8.0 p.p.m. Thiamin, being heat-labile is slowly destroyed by heat. Overheated soybean oil meal contains less than 1.0 p.p.m. thiamin. Soybean oil meals containing thiamin in the range of 2.0-4.0 p.p.m. are regarded by some processors as being in the acceptable range.

Proteolytic inhibitor activity: Determined by measuring digestion of casein with trypsin in presence and absence of soybean material. Raw extracted soybean flakes produce a relatively high degree of proteolytic inhibition. Overheated soybean oil meal produces no proteolytic inhibition. Proteolytic inhibitor activity equivalent to 10 percent of the original is not excessive.

All of these so-called quality criteria are available to processors as controls to assure production of a highly standardized and uniform soybean oil meal. However, before significance can be given to any of the indices related to nutritional quality of the protein, each processor must correlate the indices with nutritional data determined with appropriate laboratory animals using his own production. Once such a correlation has been established, the empirical indices take on significance and meaning.

Unfortunately, since production conditions are not the same within any two plants in the country, the indices for nutritional quality determined for one processing unit are not applicable to another processing unit. Similarly, feed manufacturers will fail to find good correlation of quality indices unless they confine their purchases to the production of one processor from one plant. Already many feed mixers are recognizing the advantages in securing all their soybean oil meal from a single source. This practice may gain popularity as more and more mills turn out top quality production.



—Photos by Soybean Digest

At the Peoria meeting for processors, left to right: Clayton Hejtmanek, manager Consumers Cooperative Association soybean mill, Coffeeville, Kans.; B. T. Majors, soybean department, Indiana Farm Bureau Cooperative Association, Indianapolis, Ind.; James J. Spadaro and F. A. Deckbar, Jr., engineering and development division, Southern Regional Research Laboratory, New Orleans, La.; and Wilbur P. Bidne, manager soybean processing division, and Ormanzo Peterson, president, Farmers Co-op Elevator Association, Blooming Prairie, Minn.

PEORIA REPORT:

Depression Would Hit Towns First

This time, the towns and not the farms will be hardest hit by any economic recession the nation might face in the near future. This was the belief expressed by La Verne J. Smith, treasurer of the Omaha Bank for Cooperatives, Omaha, Nebr., at the fourth annual meeting of cooperative soybean processors at Peoria, Ill., May 7-9.

Smith based his opinion on the fact that more and more married women are going to work in an effort to cover the payments on durable goods purchased and which their husbands salaries will not cover. He compared this to the over extended position of farmers after the first World War when crop prices would no longer cover payments for high priced land.

Smith felt the situation in the towns can lead to trouble. He warned processors to take this into consideration in planning expansion programs.

LA VERNE J. SMITH

Cooperative processors from eight states attended the meeting that was held at the Northern Regional Research Laboratory in cooperation with Farm Credit Administration, Washington, D. C.

The meeting was divided into two parts: (1) Progress of the work at the Laboratory on problems concerning soybeans; and (2) Discussion by the processors of their problems.

Dr. R. T. Milner, director of the Laboratory, was chairman of the section on the activities of the Laboratory.

Dr. C. W. Ofelt, chemist who is working on the problem of fortifying wheat bread with soy flour, said that bread is an ideal food for supplementing with sov flour as it is the principal food in many people's diets, and protein is a factor that bread is short of. Soy flour can do much to balance the nutrients in bread.

Ofelt feels that the problem to be met before bakers and consumers will completely accept soy flour in bread is not to materially change the color, taste or texture of the loaf, or the loaf volume or baking procedure.

Drs. A. K. Smith and P. A. Belter of the Laboratory's oil and protein division, discussed industrial production and utilization of soybean oil meal and protein. Their discussion was on the uncooked solvent meal, which is far higher in water soluble protein than other types.

Both men felt that soy protein is well intrenched in the adhesives field. They also said that as procedures in solvent extraction that require less

heat to remove the solvent from the meal are perfected more and more protein can be removed from the meal.

R. E. Beal, chemical engineer of the oilseed engineering and development section of the Laboratory, reviewed the refining of soybean oil in food products.

J. E. Carter, director of the U. S. Regional Soybean Laboratory at Urbana, Ill., said that the Laboratory has developed high yielding varieties for all sections except the extreme northern part of the soy belt and the S-100 section in the Mid-south. He said that a new variety to replace S-100 should be available by 1953.

Ward W. Fetrow of the Farm Credit Administration, Washington, D. C., was chairman of the section on processing problems.

—s b d—

USDA TESTS NEW B-12 ORGANISMS

New organisms that produce vitamin B-12 by fermenting the material in which they grow are being tested for production, the U. S. Department of Agriculture announces.

Superior strains may be expected, and this should greatly increase the supply of B-12.

One of the most recent finds reported by USDA is an organism that produces good quantities of B-12, and does so in a relatively short time. Speed is important. It means producing more of the vitamin with less outlay for equipment.

The organism came to light at Northern Regional Research Laboratory, Peoria, Ill., where it was isolated from a sample of soil from Japan. It is known as *Streptomyces olivaceous* (Waksman). It is related to the group of organisms that produce antibiotics such as streptomycin and aureomycin.

During the Laboratory's investigations, such products and byproducts as distillers' solubles, yeast, soybean oil meal, peanut meal, cottonseed meal, and "spent" culture from penicillin fermentation, were shown to be excellent as nitrogen or protein sources for the broth in which the organism is grown.

The soil sample was one of several brought to the Northern Laboratory two years ago by Dr. Allan K. Smith who had been in the Orient.

The organism was among a considerable number of isolates obtained from these soils by Dr. R. G. Benedict. Dr. Harlow H. Hall and associates in survey studies then discovered its capacity to produce B-12. Dr. T. G. Pridham aided in identification.

Storage Needs Change Farm Buildings

Farm building design must meet the challenge of a changing agricultural production picture being shaped by increased mechanization.

This was emphasized by Prof. Hobart Beresford, head of the agricultural engineering department, to editors and agricultural leaders attending the Ames premiere showing of "Arch Against the Sky," a movie produced by the Stran-Steel division of the Great Lakes Steel Corp. The premiere showing of the movie was made at the Memorial Union of Iowa State College Apr. 25.

Beresford said that the trend for farm building design is toward less handling of materials and more self service by livestock to reduce the labor requirement in farming. Farmers are demanding this and we must meet the challenge, he said.

Increased mechanization has changed our whole farm production picture, and buildings must change to fit into our scheme of modern farming, Beresford said.

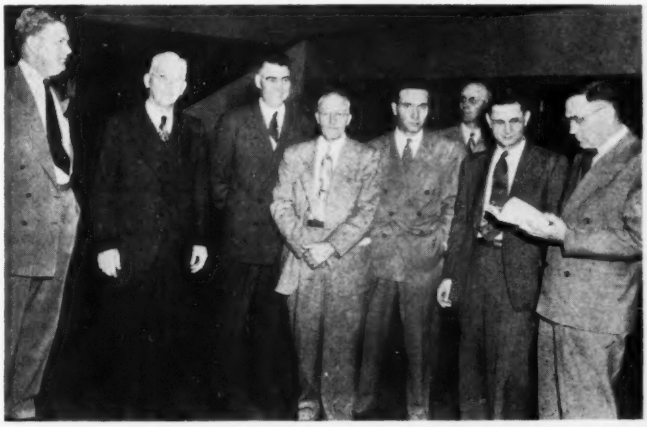
William Hukill, U.S.D.A. agricultural engineer at the college, reported that experiment stations have been working on various problems on storing and conditioning grain and other crops. The research has shown that artificial drying, using either heated air or atmospheric air, works. He said that the use of the Quonset type building shown during the day is an example of one way to adapt a building to crop conditioning. He said that he is pleased to see the Great Lakes Steel Corp. go ahead to make a practical building designed to go out on a farm to meet farmers' demands for modern methods of conditioning and storing crops.

H. J. Barre, head of the agricultural engineering department of Purdue University, said there is no question that every year many tons of crops—grain and hay—are lost through poor conditioning and storage. While we've made much progress in growing and harvesting crops, we haven't done so well in storage and preservation of crops, he said.

Barre pointed out that every year the Midwest farmer faces a storage problem with some crop. Corn poses the problem usually.

Ed Ellison, marketing specialist of the U.S.D.A., said that the Department is interested in the development of storage buildings adapted to crop conditioning because it is one of the places in which we can conserve food best. He pointed out that population increase is more rapid than our food supply production. By improved crop conditioning and storage methods on farms, we can in effect increase our food supply.

At Nebraska Processor Meeting



—Fremont Guide and Tribune photo.

Farmers, research men and dealers mingled at the recent Nebraska state soybean conference in Fremont, with the main subject—soybeans. Shown above, left to right are: Paul C. Hughes, field service director of the American Soybean Association, Hudson, Iowa; T. A. Kisselbach, Lincoln, Nebr., afternoon program chairman; Harry Lilly, Gooch Milling & Elevator Co., Lincoln; F. D. Keim and D. G. Hanway, Nebraska State Experiment Station, Lincoln; William Reese, Yutan, Nebr., farmer; Harry Wiysel, Fremont Cake & Meal Co., Fremont, Nebr.; and D. L. Gross, research agronomist, Lincoln, Nebr.

Will Plant Above March 1 Intentions

Opinion among Digest crop reporters leans toward a larger soybean acreage than was indicated by the Mar. 1 intentions report of the U. S. Department of Agriculture. The Mar. 1 report of USDA placed the probable soybean acreage at 13.8 million acres for all purposes, or a drop of almost a million acres under last year.

However, the weight of opinion still indicates a smaller acreage than 1950, due to back-to-corn and back-to-cotton movements among farmers north and south of the Dixon line.

Planting conditions were extremely variable in May, with too much rain in Kansas and Nebraska and drouth in southeast Missouri, Arkansas and points south and east. Planting conditions were good in Iowa, northern Illinois, Indiana and Ohio.

But a late spring forced abandonment of much small grain acreage and a small amount of corn. And dry soil conditions threaten to force abandonment of some cotton. Soybeans stand to gain by the shifts.

Alabama

J. H. Bryson, Jr., Dothan Oil Mill Co., Dothan, Ala. for southeast Alabama, northwest Florida (May 24): Planting date normal. 500 out of expected 3,000 acres planted by June 1. Need rain. More peanuts and more cotton. Varieties Ogden, Dortchsoy 31 and Clemson.

Arkansas

Keith Bilbrey, county agent, Blytheville, Ark., for north Mississippi County (May 24): Planting date average, but if we don't get rain and get 70,000 acres of cotton up soon, that acreage will be planted late in soybeans and corn. 100% of *intended* acreage planted. Three weeks dry spell preventing germination of 50% of crop. Total acreage 30% under 1950, due to more cotton.

L. M. Humphrey, R. L. Dortch Seed Farms, Scott, for Little Rock area (May 24): Planting date about normal. 90% of crop planted. No rain from May 1 to May 22 and very little then made things very dry. Some difficulty getting stands and some delay in planting. Acreage 85% of 1950, due to increased acreage of cotton. Fewer S-100s and Arksoys and more Dortchsoys.

Jake Hartz, Jr., Jacob Hartz Seed Co., Inc., Stuttgart, for south central and southeast (May 25): Planting date normal. It is dry and all soybean planting has stopped. If we do not have moisture our plantings will be 10 days delayed by June 1. Dry hot weather last two weeks in May. We expect acreage to be 25 to 20% less than 1950. Increase in rice and cotton acres. More Ogdens, less hay varieties.

Florida

E. N. Stephens, Pensocola, for Escambia County (May 25): Planting date a little late. 50% of crop planted June 1. Weather very dry. 10% increase in acreage compared with 1950.

Georgia

G. E. Watts, Taylor Oil & Peanut Mills, Moultrie, for Colquitt County (May 25): Planting date normal. Practically all planted. Weather dry. Acreage 60% of 1950. Yields of soybeans past several years have been rather low. As result, farmers planting other crops.

Illinois

J. E. Johnson, Champaign, for Champaign and adjoining counties (May 26): 70% of crop planted June 1. Weather cool, windy and dry. Some few areas with local rains. Some farmers will be compelled to wait for rains to provide moisture. Very small amount of land to be plowed. Acreage slightly smaller than 1950. Larger corn acreage principal factor. Adams will be increased. Observations of last year indicate this variety will make higher yield on lower fertility levels than Hawkeye, the most popular variety for 1950. Lincoln continues one of good all around varieties.

Robert W. Weitzer, Valley Farms Co., Carrollton, for west central (May 26): Planting date normal. 80% of crop planted June 1. Weather very dry. Soybean acreage 25% less than 1950 for Valley Farms. More corn being planted. Also last year some wheat had to be plowed under due to winter killing and that ground went to beans. Varieties being planted: Cypress No. 1, Adams, Hawkeye, Wabash, Rickard Korean.

C. G. Simcox, Assumption, for south central (May 26): Planting date normal. 95% of crop planted June 1. Weather conditions good. Acreage 20% less than 1950. More corn and wheat. A large increase in Hawkeyes.

Walter W. McLaughlin, Citizens National Bank, Decatur, for Decatur May (25): Planting date slightly ahead of normal. 85% of crop planted by June 1. Most beans going in in nice shape. Some ground rough due to plowing too wet but general rain May 26 and 27 solved this problem. Acreage same as 1950. Some red clover and wheat failed and land is being planted to soybeans. This offsets what might have been a decrease in beans due to allotments being removed from corn. A few Adams being planted.

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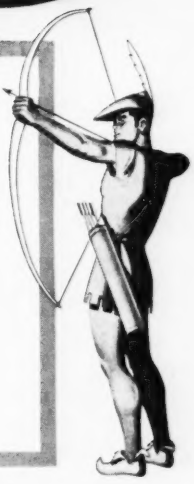
- Daniels' Supreme
- Kaysoy
- Nutriwhip
- Packers Granular
- Paint Vehicles
- Soya Fatty Acids
- Soy Flour



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Russell S. Davis, Clayton, for west central (May 26):Planting date a bit early. 90% of crop in June 1. Weather conditions almost ideal. Acreage slightly higher than 1950, affected by small oats seeding and wheat failure. Crop off to good start, with more acres than last year. Seedbeds are in good shape. Moisture sufficient for germination.

Indiana

George K. Black, J. A. McCarty Seed Co., Evansville, for southwestern (May 25): Planting date five days early. 75% of crop planted June 1. Weather condition excellent. May 22 rain very timely. Acreage up slightly.

Sam D. Hollett, manager, Swift & Co., Frankfort for central western (May 24): Planting date 10 days-two weeks early. 100% of crop planted June 1 possible with continued favorable weather. Weather conditions excellent—above normal—some beans up and looking very good. Very little change in acreage if any. Can't find any of our adjacent counties that report decreased acreage. Some wheat plowed down on account of winter kill, which may be put into beans, but this is hardly a factor. Probably more Hawkeyes than last year, but Lincolns still predominate.

Peter J. Lux, state PMA, Indianapolis: Planting date 10 days early. 75% of crop planted by June 1. Weather very good. 2% more acreage than 1950.

Chester B. Biddle, Remington, for northwest (May 24): Planting date 3 to 5 days earlier than past several years. 40% of crop planted by June 1. Weather favorable. Adequate moisture. Soil temperature very good. Acreage down 5 to 10% compared with 1950. Corn-bean price ratio favorable to raising corn.

Iowa

Wayne Olson, Okoboji Hybrids, Milford (May 28): 15% of corn to go in. Only 65% of intended oats acreage was planted. Not too much interest in soybeans.

Kansas

H. L. Collins, agricultural statistician, (May 24): Planting started about normal but has been held up because of rains and wet fields. Estimate 50 to 75% planted by June 1 depending on weather conditions. Frequent rains have occurred in soybean area, but warm weather has been favorable for germination and growth of early planted beans. Some washing has occurred. Intentions to plant in March were 122% of last year's acreage. Many farmers did not get intended oats acreage planted and some of this will probably be put in beans. Frequent rains during May have allowed farmers only a few days when they could make good progress in planting. Will need several days of drying weather to allow planting on bottom lands.

G. C. Wareham, Thomson Soya Mill, Hiawatha, for northeast (May 24): Planting date will more than likely be normal, depending on weather conditions between now and the 15th of June. Weather very wet. Only about 50% of normal oats acreage was planted due to too much moisture and fields not drying out. Farmers have just been able to get in the corn fields this week. Very little corn planted. A lot of ground yet to be plowed. Soybean acreage about the same unless weather conditions delay corn planting too much, and farmers turn to soybeans to take place of corn. Seed reservations about same as last year at this time. Lincoln is choice No. 1 for this area due to early maturity. Stands good, does not shatter, high yielder. Some inquiry for Hawkeye. Just turn off the water!

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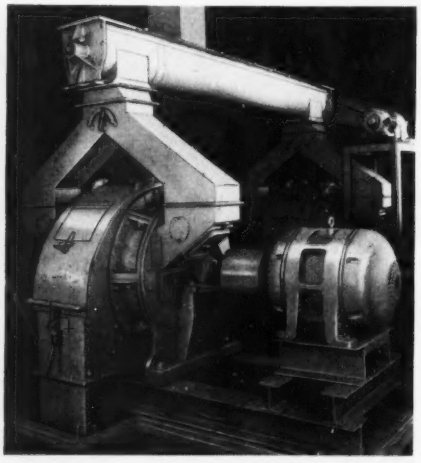

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E. A. Cleavinger, extension agronomist, Kansas State College, Manhattan, for eastern (May 26): Planting date normal. 60% planted June 1. Weather conditions good. Not much change in acreage from 1950. Wabash will be increased.

Kentucky

A. J. Reisz, Henderson, for western Kentucky and southern Indiana (May 24): Planting date normal. 60% of crop planted by June 1. Weather dry. Acreage 90% of 1950. Shift to corn.

Louisiana

W. M. Scott, Tallulah, for northeast (May 25): Planting date 30 days later than normal due to severe drought. 50% of crop planted to date and about 50% of that up. Worst drought we have ever had in spring of year. Only 50% of cotton up to poor stand. Many farmers are thinking of planting a large portion of cotton acreage not up in soybeans if we get rain in time to plant beans. If this is done will increase bean acreage over last year probably 20%. Less S-100s.

Michigan

S. C. Hildebrand, farm crops department, Michigan State College (May 28): Planting date normal to late. 15% of crop planted by June 1. Weather conditions good. Adequate moisture. Acreage same to 5% higher than 1950. Poor weather for grain planting changed intentions to plant.

Minnesota

John W. Evans, Montevideo, for southwest central (May 25): Planting behind normal schedule. 60% of crop planted June 1. Plenty of moisture. Seed demand less but more farmers may have their own seed. Corn acreage increase more in evidence now than soybean increase. When low areas dry out soybeans will be planted. Otherwise probably less soybeans planted this year. More Monroe variety. Small acreage Blackhawk in every soybean growing county.

R. E. Hodgson, Waseca, for south central (May 24): Planting date 10 days late. Last week has been very favorable and corn is going in fast. A lot of bean ground unworked. Some still too wet. Acreage probably 5% more than 1950. Late season and wet land probably changed some corn plans to beans. Our first grain seed Apr. 30 because of wet soil. Lots of rain since then has delayed planting of grain and corn. This last week weather has been excellent. Blackhawk introduced for first time. Many Monroes seeded.

C. F. Marshall, Honeymead Products Co., Mankato (May 24): Planting week earlier than last year. 40% planted. Weather conditions very good. Ground worked fine and judging by oats very quick growth. No corn or beans through yet. Acreage 10% higher than 1950. Loss of oats, barley and some flax due to wet weather.

Missouri

E. M. Poirot, Golden City, for southwest (May 25): Planting date normal. 60% planted June 1. Weather conditions good. Acreage same as 1950 or little less. Good corn planting season. More S-100s.

O. H. Acom, Wardell, for southeast (May 25): Planting date earlier than normal. 95% planted. 60% up to stand. Balance waiting on rain. Weather dry. Acreage 90% of 1950. Some beans land to cotton. If dry weather continues cotton land with poor stands will be put in beans. Early beans that are up looking good. More Ogden and Wabash, less S-100.

Nebraska

Donald G. Hanway, assistant agronomist, University of Nebraska, Lincoln (May 25): Planting delayed somewhat by wet weather. Continuous wet weather has delayed both seedbed preparation and planting. A break of several days would be helpful. Acreage 10-25% above 1950. Inability to get oats seeded, favorable soybean yields in recent years and a good price are factors. Considerable Adams being planted for first time.

North Carolina

Irvin Morgan, Morgan Oil & Refining Co., Farmville, for eastern (May 25): Planting date normal. 100% planted June 1. Weather dry. 15% less acreage than 1950. Increase in cotton and tobacco acreage.

North Dakota

C. J. Heltemes, Fargo (May 28): Planting date about normal. Weather conditions have been very favorable for field work but topsoil getting dry in many localities. No general rain. Subsoil moisture still mostly adequate in soybean area.

Ohio

G. G. McIlroy, Irwin, for west central (May 28): Planting date normal. 30% of crop planted June 1. Weather favorable to dry for best germination. Conditions spotty. Acreage probably 10% higher than in 1950 due to inability to get oats seeded in proper time. Some oat acreage has been switched to soybeans. Acreage practically all Lincolns and Hawkeyes—mostly Lincolns.

Soybean Johnson, Delphos Grain & Soya Products Co., Delphos, for northwest (May 24): Every indication planting date will be 10 to 15 days earlier. Lots of soybean ground fitted. General rains starting weeds. Possibly 10% planted June 1. Weather conditions have been almost ideal. Week of excellent weather allowed field plowing and preparation followed by general rains, will start

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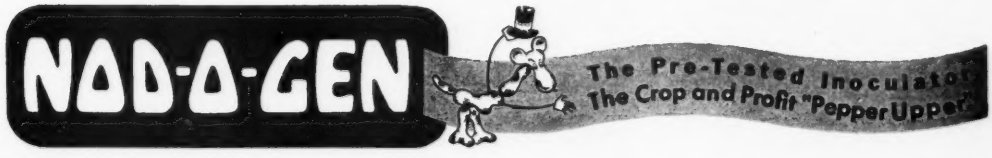

weeds and put ground in excellent condition. If no more rain planting will be heavy and general by June 4. Every indication area will plant 5 to 10% more acreage than ever seeded before; very large reduction in oat acreage due to long wet spring; sizeable abandonment of wheat due to winterkilling; general discouragement over corn yields last year because of heavy losses, as high as 50% due to wet ground and inability to complete harvest until this spring. Many farmers who lost a sizeable quantity of corn are definitely reducing their corn acreage.

Calvin Heilman, Kenton, for Hardin, Wyandot and Marion counties (May 25): Scattered showers have delayed work in some spots. Corn planting almost completed. Work on bean acreage will move fast when is planted. Bean acreage down 10%. Corn-bean price relationship favors corn. Livestock feeders needing more corn. More Hawkeyes and Monroes. Less Lincoln. Some farmers objecting to Hawkeye because they grew too close to ground last year.

Virginia

Henry M. Taylor, Department of Agriculture, Richmond, (May 24): Planting date about one week earlier than last year. Crop 55% planted June 1. Weather generally favorable. Mar. 1 intentions indicated increase of 15% over 1950.

West Virginia

R. J. Friant, extension agronomist, Morgantown (May 25): Planting date week to 10 days late. 75 percent of crop planted by June 1. Rainy weather and cold, wet land delayed planting. Acreage about 13.4% less than 1950. 95% of crop planted for hay and green manure.

Wisconsin

John P. Dries, Saukville, for east Lake Shore area (May 26): Rainy weather will cause some delay in planting. Some corn acreage will go to beans if season gets too late. Not much change in acreage as compared with 1950. Sweet corn and corn will give better return in dollars. Monroe and earlier varieties will have preference.

Ontario

R. H. Peck, River Canard, Ontario, for southwestern (May 24): Planting date normal. Possibly 40% planted June 1. Weather favorable for soil preparation. 20% acreage increase over 1950. Increase in acreage due to soybeans proving very satisfactory crop as to labor requirements, soil conditions, as well as financial returns. Small change to earlier varieties.

World Soybean Crop Hits New High

World soybean production during 1950 is estimated at an all-time high of 631 million bushels on the basis of information available to USDA's Office of Foreign Agricultural Relations. Production was about one-fifth greater than in 1949 and surpassed the previous high of 1948 by 68 million bushels. Record crops were harvested in the United States and Canada, and production in China is believed to have been near-average.

Canada harvested 3,039,000 bushels of soybeans from 142,000 acres, representing an increase of one-sixth from 1949. Acreage—all in Ontario Province—increased by more than one-third, primarily from the use of newly-developed soybean varieties that are adaptable to central and eastern Ontario in addition to the primary area in the southwestern part of the Province. It was estimated that 70 percent of the soybean acreage was planted to these new Canadian varieties. The widespread growing of soybeans also was stimulated by better prices and more general use of combines.

The United States produced 287,010,000 bushels of soybeans from 13,291,000 acres last year. Output was at an all-time high. Last year's bumper crop came as a result of a large acreage harvested for beans and a relatively high yield of 21.6 bushels per acre.

The severe drought in the Balkan countries, where the bulk of the European soybeans is produced, is believed to have reduced output sharply. Italian production also decreased—from 52,000 bushels in 1949 to 29,000 in 1950.

Turkey harvested 73,000 bushels of soybeans last year, larger than the previous year's outturn by 23,000 and twice the prewar average.

Soybean output in China and Manchuria may have increased from the 1949 harvests of 179 million and 66 million bushels, respectively. Sizeable quantities of beans have been shipped to Western Europe from Manchuria.

Japan's production in 1950 amounted to over 12 million bushels, greater by 3 million bushels than in 1949 and the largest in a decade.

Reported increases in soybean plantings in Indonesia last year indicate that production probably surpassed the 9.7 million bushels harvested the previous year.

Thailand's crop amounted to 400,000 bushels compared with the prewar production of about 230,000 bushels.

Brazil's output decreased from a high of 1.2 million bushels in 1949 to about 980,000 last year.

Soybeans are grown on a limited scale in Africa with production still in the experimental stage in many areas. Decreases from 1949 were reported in several countries. Contrary to earlier estimates, Tanganyika's harvest was down from 49,000 bushels in 1949 to 31,000 last year; Uganda reported a crop of 75,000 bushels against 117,000 in 1949; and production in the Union of South Africa decreased slightly to 40,000 bushels from 48,000 the previous year.

SOYBEANS: Acreage, yield per acre, and production in specific countries, year of harvest, average 1935-39, annual 1947-50(*)

Continent and country	Acreage (**)		Yield per acre		Production	
	1949	1950†	1949	1950†	1949	1950†
	1,000 acres	1,000 acres	bushels	bushels	1,000 bushels	1,000 bushels
NORTH AMERICA						
Canada	104	142	25.1	21.4	2,605	3,039
United States††	10,156	13,291	22.7	21.6	230,897	287,010
EUROPE						
Italy	3	2	18.3	17.5	52	29
ASIA						
Turkey	5	5	10.6	14.9	50	73
China proper (22 provinces)	11,762	—	15.2	—	179,200	—
Manchuria	5,500	—	12.0	—	66,000	—
Japan	648	615	13.8	19.9	8,928	12,254
Korea§	658	—	10.0	—	6,654	—
Indonesia§§	872	—	11.2	—	9,737	—
AFRICA						
Tanganyika	—	—	—	—	49	31
Union of South Africa	‡13	—	5.3	—	48	40
World total§§§	31,550	36,360	—	—	518,750	631,460

* Years shown refer to years of harvest. Southern Hemisphere crops which are harvested in the early part of the year are combined with those of the Northern Hemisphere harvested the latter part of the same year. ** Figures refer to harvested areas as far as possible. † Preliminary. ††Acreage harvested for beans. § Beginning with 1947 figures represent South Korea only. §§Java and Madura only prior to 1948. ‡ Planted acreage. §§§ Includes estimates for the above countries for which data are not available and for minor producing countries.

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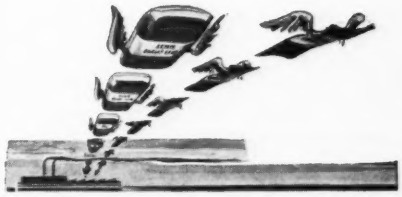

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STALEY HEAD OF FEED MANUFACTURERS' ASS'N

Thomas W. Staley, general manager of the Staley Milling Co., Kansas City, Mo., was reelected chairman of the board of the American Feed Manufacturers Association at the annual meeting in Chicago May 9.

H. J. Buist, president of Allied Mills, Inc., Chicago, was renamed vice chairman.

Ten directors were named to the 30-man board for three-year terms. They include:

Clyde H. Hendrix, Pillsbury Mills, Clinton, Iowa; D. B. Lourie, Quaker Oats Company, Chicago, Ill.; C. S. Woolman, Hales & Hunter Co., Chicago, Ill.; C. W. Tilson, Farmers Mutual, Durham, N. C.; Bruce K. Conover, Jr., Maritime Milling Co., Buffalo, N. Y.; W. D. Walker, Arcady Farms Milling Company, Chicago, Ill.; John J. White, Schultz, Baujan & Co., Beardstown, Ill.

The American Feed Manufacturers Association is the official spokesman for the three-billion-dollar feed manufacturing industry. Walter C. Berger, Des Moines, Iowa, is executive president. W. E. Glennon, Elmhurst, Ill., is executive secretary. Offices are located at 53 West Jackson Blvd., Chicago.

Dr. C. D. Caskey, Cooperative Mills, Inc., Baltimore, Md., was elected chairman of the nutritional council of the association. He succeeds Dr. H. E. Bechtel of General Mills, Inc., as head of the feed industry's 76-man nutrition committee.

—sbd—

TRI-STATE MEETING

Soybeans—The Feature Story, film produced by National Soybean Crop Improvement Council, Decatur, Ind., will be shown at the annual convention of the Tri-States Oil Mill Superintendents Association, June 20-21-22 at Atlanta Biltmore Hotel, Atlanta, Ga.

"Solvent Extraction" will be discussed by John W. Dunning, director of research, V. D. Anderson Co., Cleveland, Ohio. "Four Years of Solvent Extraction" will be the subject of an address by Joe Brady, manager, Helena Cotton Oil Mill, Helena, Ark. "Yours to Command", a sound picture in color will be shown by Russell Maas, president, Screw Conveyor Corp., Hammond, Ind.

C. C. Castillow, district engineer, Southern Cotton Oil Co., Greenville, Miss., is general convention chairman. N. Hunt Moore, general manager Delta Products Co., Wilson, Ark., is president.

—sbd—

CHANGES AT SWIFTS

Changes of management personnel in the oil mill operations of Swift & Co. have been announced by P. A. Laws, district manager at Memphis, Tenn.

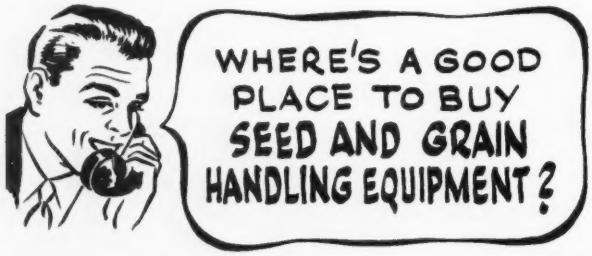
W. M. McAnally, who has been manager of the Swift oil mill at Memphis since 1945, has been made manager of the company's oil mill at Little Rock, Ark. He will replace H. B. White, who is being transferred to the company's district office at Memphis.

E. C. McGee of the Memphis district office has been made manager of the Swift oil mill at Memphis.

McGee joined Swift & Co. in 1927. He was manager of the company's soybean mill at Des Moines, Iowa, from 1947 until Aug. 1950. Since Aug. 1950 he has been associated with Laws in the Memphis office.

McAnally joined Swift & Co. in 1932 as a seed buyer and has been associated with the Memphis oil mill operations since that time.

White joined Swift & Co. in 1924 in the accounting department.



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PUBLICATIONS

A USDA Study of Phosphatides

Soybean phosphatides are a by-product of the soybean processing industry. These compounds, often described as intermediate between fatty oils and proteins, are potentially available in quantities much greater than those now used by industry.

At present lecithin and other phosphatides are being used as emulsifying agents in making food and industrial products such as candies, bread, textiles, tires, paints, printing inks, soaps and dyes, but mainly in small amounts.

The actual composition of soybean phosphatides has been determined under a Research and Marketing Act project at the Northern Regional Research Laboratory, Peoria, Ill. These studies show three main groups of soybean phosphatides: lecithins, 30 percent; cephalins, 30 percent; and phosphoinositides, 40 percent.

The choline-containing fraction (lecithin) and ethanolamine-containing fraction (cephalin) are soluble in alcohol; the remaining fraction consists of two complex phosphoinositides, one of which is soluble in alcohol and the other in hexane. Sugars usually accompany these substances, but uncertainty still exists as to whether they are merely carried along mechanically or are chemically combined.

As the phosphatides from corn oil are reported to be superior for certain uses, a comparison was made of soybean and corn phosphatides. It was found that the same components are present in both, but in markedly different amounts. For example, the cephalin fraction of corn phosphatides amounts to 10 percent or less.

Further studies on the large-scale laboratory preparation of the phosphatide fractions are planned.

REPORT OF THE CHIEF OF THE BUREAU OF AGRICULTURAL AND INDUSTRIAL CHEMISTRY, 1950. U. S. Department of Agriculture, Washington 25, D. C.

Low-Cost Protein

Searching for new sources of supplies of low-cost proteins, food nutritionists of this and foreign lands have centered attention more and more on soy protein. Soy protein, popularly known as soy flour, was shipped from America to more than a score of overseas countries during and following World War II. It offers almost limitless possibilities in the threatening period of turmoil ahead.

At the invitation of the German Government's Food Ministry and under the sponsorship of ECA, Dr. C. Kenneth Shuman, with R. G. Brierley, made a survey of the protein shortage in that country, and presented factual nutrition information on soy protein for use of the German food authorities.

So many requests have been made by organizations for a copy of Dr. Shuman's lectures on the subject that the basic material contained in them has been summarized for the use of research experts and others who are interested in the use of soy protein as an ingredient in various food products.

Shuman is director of nutrition of the Soya Food Research Council.

SOY FLOUR—ITS INCREASING IMPORTANCE AS A LOW COST, ABUNDANT PROTEIN IN THE FIELD OF HUMAN NUTRITION. A literature review prepared by C. Kenneth Shuman. Soya Food Research Council, 828 Barr Bldg., Washington 6, D. C.

Sludge, Refining Loss

When tankcars of crude soybean oil are shipped from processor to refiner, a layer of sludge, or settlings, is often deposited in the bottom of the car. This material comes largely from the phosphatides and other nonglyceride components of the crude oil.

Refiners dislike receiving tankcars containing sludge, mainly because of lower net weight of oil recoverable at destination and the increased difficulty of cleaning the tank. Present trading rules provide for price adjustments when the amount of sludge exceeds 150 pounds per tank car.

Because the price of oil is adjusted according to refining loss as measured on a sample taken when the tankcar is loaded, the relationship between refining loss and sludge is important with respect to both the price of oil and the good will between buyer and seller. Tests to determine this relationship were undertaken by the Northern Regional Research Laboratory, Peoria, Ill., and the technical committee of the National Soybean Processors Association.

Preliminary tests indicate that there is a decrease in refining loss as sludge accumulates and that the present penalties on both sludge and refining loss may need adjustment to be fair.

Further tests are under way.

REPORT OF THE CHIEF OF THE BUREAU OF AGRICULTURAL AND INDUSTRIAL CHEMIS-

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TRY. AGRICULTURAL RESEARCH ADMINISTRATION. 1950. U. S. Department of Agriculture, Washington 25, D. C.

Alternate Oil Crops

Restriction of cotton acreage in the past and the possibility of future acreage restriction has stimulated the search for replacement crops, mainly among other oilseeds.

Several southern and southwestern state experiment stations have been investigating various oilseeds. Three are evaluated in the 1950 report of the Chief of the Bureau of Agricultural and Industrial Chemistry. They are sesame, buffalo gourd and safflower seed.

Sesame seems most likely to meet the requirements of both the farmer and the processor, of those investigated, states the report.

REPORT OF THE CHIEF OF THE BUREAU OF AGRICULTURAL AND INDUSTRIAL CHEMISTRY. AGRICULTURAL RESEARCH ADMINISTRATION. 1950. U. S. Department of Agriculture, Washington 25, D. C.

Canadian Market

Vegetable oils have found an increasingly important market in Canada since the various provinces legalized the manufacture of margarine.

Exports of cottonseed oil rose from 1.2 thousand short tons in 1948 to 34.4 thousand in 1949. Soybean exports to Canada in 1949 were close to 150 million pounds, or twice the prewar average.

THE FARMER'S STAKE IN UNITED STATES-CANADIAN TRADE. Agricultural Information Bulletin No. 35. Office of Foreign Agricultural Relations, U. S. Department of Agriculture, Washington 25, D. C.

Antibiotics

The addition of a dried whole aureomycin mash to a corn-soybean oil meal ration for growing-fattening pigs increased average daily gains significantly in both drylot and pasture.

The ration was fortified with B-vitamins, vitamin A, vitamin D-2 and minerals including trace minerals. The aureomycin mash was fed without meat and bone scraps and with two levels of meat and bone scraps.

The increased gains were obtained regardless of the presence of meat and bone scraps in the ration. Pigs fed the dried whole aureomycin mash were more uniform in hair color and finish.

The addition of meat and bone scraps did not significantly increase gains. There was no interaction between the effects due to dried whole aureomycin mash and meat and bone scraps.

No diarrhea occurred in the pigs that were fed the aureomycin mash. Some pigs had diarrhea in all of the lots not receiving the mash.

DRIED WHOLE AUREOMYCIN MASH AND MEAT AND BONE SCRAPS FOR GROWING—FATTENING SWINE. By K. C. Lepley, D. V. Catron and C. C. Culbertson, Iowa State College. Journal of Animal Science, Nov. 1950, Vol. 9, No. 4

B-12 for Poultry

Normal chicks may be raised efficiently to 16 weeks of age and longer without the use of animal proteins in the diet, according to a University of Minnesota report.

An all-vegetable corn-soybean-oil-meal ration was used. It was supplemented with vitamin B-12, riboflavin, vitamins A and D and minerals.

Animal proteins are not essential in a ration for fast gain and economical production of poultry meat, the report states. This ration is being used successfully on a commercial scale in Minnesota. It can be safely recommended as a broiler ration as long as good quality soybean oil meal is used, according to the report.

VITAMIN B-12 IN ALL-PLANT RATIONS FOR CHICKS AND SPARING ACTIVITY OF METHIONINE AND CHOLINE. By G. M. Briggs, E. G. Hill and M. J. Giles, poultry husbandry division, University of Minnesota, St. Paul, Minn. Poultry Science, Sept. 1950.

Miscellaneous

COMPARISON OF HIGH AND LOW PROTEIN CORN FOR GROWING-FATTENING PIGS IN DRYLOT. By F. A. Dobbins, J. L. Krider, T. S. Hamilton, E. B. Earley and S. W. Terrill, University of Illinois. Journal of Animal Science, Nov. 1950. Vol. 9, No. 4.

THE AMYLOLYTIC ENZYMES OF THE SOYA BEAN. By S. Peat, S. J. Pirt and W. J. Whelan, Bangor, Wales. International Congress of Biochemists.

Mills throughout the middle west are saving up to $1 a ton in sacking costs by using 'NU-SEME' bags . . . an exclusive, patented Western Burlap Bag Co. product. And, at the same time, they're getting bags that look as good as brand new AND ARE JUST AS STRONG! . . . with their regular colorful imprint!

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GRITS and FLAKES... FROM THE WORLD OF SOY

◆ Sioux Soya Co., Sioux City, Iowa, has begun a test run on its new solvent unit. Henry M. Sherman, president of the firm, who has been ill for some time, is now able to spend part of each day at the office.

◆ Link-Belt Co. announces that it has started construction of a modern engineering and manufacturing plant for the production of elevating, conveying and processing machinery, on a 43-acre site at Colmar, Pa.

◆ The Nubian industrial division of the Glidden Co. has recently finished a three-story laboratory building at 1850 N. LeClaire Ave., Chicago. It is devoted to solving problems of organic finishes for industry.

◆ *Swift & Co.'s yellow "Allsweet" margarine is appearing in a new package containing four foil-wrapped quarters. Flat carton, yellow and blue, has a window in the main panel.*

◆ "Co-ops Help in Switch to Soybeans," in May News for Farmer Cooperatives, is story of four farmers' elevators that influenced the trend to soybeans on the buckshot black land of Mississippi. The elevators are Farmers' Elevator and Supply Co., Belzoni; Yazoo Elevator Co.; Madison County Cooperative, Canton; and Sharkey-Issaquena Elevator Co., Egrement.

◆ "Better Life for Hogs," is an easy-to-read 32-page booklet published by the Indianapolis feed mill division of the Glidden Co. Its purpose is to aid swine raisers in selection of stock, breeding, feeding, management and marketing.

◆ At a recent meeting of Chase Bag Co.'s board of directors F. R. Ludington, Jr., was made assistant vice president of the 104-year-old firm. He has been serving in a managerial capacity at the company's Philadelphia branch. His new headquarters will be in the executive office in New York City.

◆ *General Mills, Inc., has bought the Fulton Bag Co. building in Minneapolis, Minn., for aeronautical research. The building is located across the street from the firm's present research laboratories.*

◆ After 34 years as chief chemist at Barrow-Agee Laboratories, Inc., Memphis, Tenn., Charles H. Cox has retired. He is the author of the method for the analysis of cottonseed which is the basis for the official grading plan of the U. S. Department of Agriculture and the National Cottonseed Crushers Association.

◆ Dr. Alex Schwarcmann, vice president and technical director of Spencer Kellogg & Sons, Inc., Buffalo, N. Y., gave a talk on drying oils and atomic energy before the Chicago Production Club May 7. His talk included a discussion of the modification of soybean oil.

◆ Ralston Purina Co.'s newest mill was officially opened at Macon, Ga., May 10. Mill is under the management of Arno B. Tagge with John K. Pippant as superintendent. Capacity of the new plant on a two-shift basis is 120,000 tons of Chows annually.

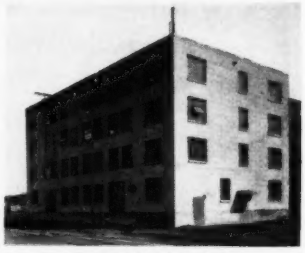
◆ *Swift & Co., Des Moines, is building a new feed mill for the manufacture of Swift's feeds in connection with the firm's soybean processing plant. Construction has begun.*

◆ There was a feature story about Taylor Fouts, Camden, Ind., soybean pioneer and honorary life member of the American Soybean Association, in the May 15 issue of Indiana Farmers Guide.

◆ R. E. Dugan, industrial agent for the Rock Island Lines, has issued new soybean production maps for Illinois, Iowa, Minnesota, Arkansas, Kansas, Missouri and Nebraska. Production by counties for 1940, 1948 and 1949, and estimated production for 1950 are shown.

◆ Chemical plants division of Blaw-Knox Co. has received an order from

A-D-M OPENS PLANT



New A-D-M pilot plant.

Election of a new member to the board of directors and opening of a new product development or pilot plant at Minneapolis were announced May 9 by Archer-Daniels-Midland Co.

The new director is Grant Keehn, executive vice president of the First National Bank of the City of New York. A former industrial financial consultant and vice president of Kelsey-Hayes Wheel Corp. of Detroit, Keehn is also a director of Great Northern Railway Co., G. D. Searle & Co., Diesel Publications, Inc., and Kelsey-Hayes Wheel Corp.

The new four-story product development plant, designed by ADM's chemical engineering section, will process all types of oils and fatty acids. Here oils can be oxidized and modified under varying conditions of heat, vacuum, pressure and chemical reaction.

The plant will be operated by the ADM research division headed by S. O. Sorensen, vice president. James Konen, director of research, will be in charge. He will be assisted by Newton D. Farel, formerly in charge of ADM's Los Angeles refinery.

—s b d—

NEW OPERATION

A $250,000 solvent processing plant for the Tri-County Cooperative Soybean Association at Dawson City, Minn., is now under construction and should be in operation for the 1951 harvest.

Installation of the 25-ton-per-day unit employing trichlorethylene solvent is by Crown Iron Works Co. of Minneapolis. Plant will be similar to the one operated by the Farmers Cooperative Processing Association at Blooming Prairie, Minn.

The Tri-County Cooperative Soybean Association was organized by a

THE 1951 CROP AND THE OIL SEED PROCESSOR

JUST how does the outlook for this year's oil seed crop affect the oil seed processor? With the Government encouraging increased cottonseed acreage, there is some indication that the combined soybean-cottonseed acreage this year will be the biggest in history. With a normal growing season, it is predicted that the 1951 domestic oil seed crop will be the biggest ever harvested.

This does not necessarily mean a long and profitable operation for processors generally. The war and the heavy armament program, together with a more favorable world wide dollar balance and continuation of the ECA program, will tend to force seed prices upward. These same factors are tending to force labor prices upward, as well as to syphon off at least a portion of the rural labor supply normally available to the oil mill operators.

The net result to the oil mill operator generally is believed to be a more abundant supply of seed, increased seed and operating costs, increased spread between oil and meal, and possibly decreased margin for conversion of seed to oil and meal.

This situation is favorable for investment in a solvent extraction system. Such an investment reduces labor requirement, particularly if it retires a hydraulic mill—in many cases the saving in labor cost alone will justify the capital cost. At the same time, it increases oil yield by 30 to 40 pounds per ton of seed, decreases repair costs, improves yields and plant efficiency generally. The following are typical for a 200-tons-per-day plant, operated on soybeans and on cottonseed:

	Cottonseed	Soybeans
Capacity	200	200
Residual Oil	.5	.4
Solvent Loss	5 lbs./ton	6 lbs./ton
Steam	6,000 lbs./hr.	7,800 lbs./hr.
Electric Power	200 kw./hr.	225 kw./hr.
Cooling Water Make-Up	20 gpm	25 gpm
Operating Labor	2 men/shift	2 men/shift

Prompt action is required by any firm desiring a solvent plant for operation on the 1951 crop. By placing an order for a complete "turnkey" plant immediately with Chemical Plants Division, Blaw-Knox Construction Company, assigning this experienced organization the responsibility for engineering, design, procurement, and construction, a processor can have his plant in operation in a minimum of time. If expected conditions materialize, operations from this one season could assist materially in the write-off of the initial cost.

We urge you to write us at one of our offices listed in the adjoining advertisement. The opportunity for a favorable return from prompt action has seldom been better.

The majority of all U.S. Soybean extraction plants contracted for since 1947 were designed, built and equipped by Chemical Plants Division . . . . . .

Why? For the answer, just refer to *plant performance data.* In every instance, Blaw-Knox-built and equipped extraction plants have exceeded performance guarantees in every category . . . assuring more profit per dollar invested and per ton processed. Why settle for less? Glad to consult with you now concerning future plans.

★

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General Mills, Inc., for the complete engineering and construction of the firm's 250-tons-per-day soybean processing plant at Rossford, Ohio.

◆ Clyde Hendrix, vice president in charge of the feed and soy division of Pillsbury Mills, Inc., at Clinton, Iowa, will move to Minneapolis in June to be responsible for Pillsbury's entire feed operations. D. W. Hunter will take over the duties in Clinton formerly handled by Hendrix. He is production vice president of the feed and soy division.

◆ E. H. Tenent, Woodson-Tenent Laboratories, Memphis, Tenn., has been appointed chairman of a new subcommittee of the fat analysis committee of the American Oil Chemists' Society, to find a method by which trichloroethylene in vegetable oils can be determined. Serving with Tenent are R. W. Bartlett, Barrow-Agee Laboratories, Memphis, Tenn.; L. R. Brown, A. E. Staley Co., Decatur, Ill.; C. P. Long, Procter & Gamble Co., Cincinnati, Ohio; V. C. Mehlenbacher, Swift & Co., Chicago, Ill., who announced the appointments; and J. L. Schille, Best Foods, Inc., Chicago, Ill.

◆ *Boone Valley Cooperative Processing Association has dismantled its two-Expeller plant at Hubbard, Iowa. Equipment is being moved to the plant at Eagle Grove, Iowa.*

◆ Rex Beresford, Iowa State College extension feeding specialist, Ames, received a superior service award from the U. S. Department of Agriculture May 15 "for his resourcefulness and ability in changing beef cattle feeding from a speculative enterprise to a stable business."

◆ Boyd S. Oberlink, who has been serving as assistant to the vice president in charge of the tractor division of Allis-Chalmers Manufacturing Co., has been elected a vice president of the firm. He will continue to serve in the tractor division.

◆ The board of directors of Allis-Chalmers Manufacturing Co., Milwaukee, Wis., has reelected W. A. Roberts as president.

◆ Dr. R. E. Greenfield, general superintendent of the A. E. Staley Manufacturing Co. since 1946, has been elected vice president in charge of manufacturing operations. The bulk of the company's recently completed 20-million-dollar plant modernization program was carried out under his supervision.

◆ *Jay K. Omvig recently was transferred from Swift & Co.'s Sioux City plant to the sales department of Swift's soybean mill at Champaign, Ill.*

◆ Archer-Daniels-Midland Co., Minneapolis, Minn., has published a revised and enlarged oils chart. This 24-page bulletin describes and compares more than 170 different materials, including soybean oil, fatty acids and lecithin.

◆ Screw Conveyor Corp., Hammond, Ind., has announced the appointment of Terry W. Edwards as works manager. He will head all manufacturing divisions of the company and the material and production controls section.

◆ William H. Jasspon, president of Perkins Oil Co., Memphis, Tenn., died suddenly of a heart attack May 6. He was 63. For three years during the war group of farmers and Dawson business men.

Officers are: Carl M. Hanson, president; Melvin Knutson, vice president; Morris Enevoldson, secretary; and Glenn E. Blomquist, treasurer.

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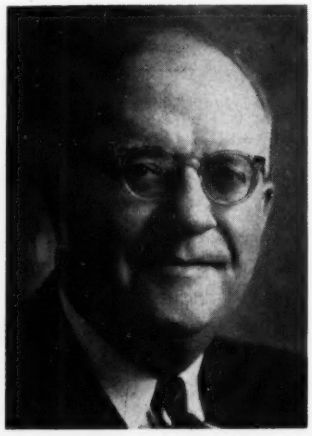
WINS MORRISON AWARD



DR. H. H. MITCHELL

Dr. Harold Hanson Mitchell, chief of the animal nutrition division at the University of Illinois, has been named winner of the 1950 Morrison award. He was selected for his outstanding work on the protein requirements of livestock and the protein values of farm feeds.

Author of 241 scientific papers, he also is co-author of three books: Studies in Nutrition, Vol. III with H. S. Grindley and F. W. Gill, 1911, Vol. I (with H. S. Grindley), 1917, and Biochemistry of the Amino Acids (with T. S. Hamilton), 1929.

The award which represents one of the highest tributes in the field of agriculture, was presented to Dr. Mitchell at the meeting of the American Society of Animal Production in Chicago.

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Here's the new Steinlite Model 400-G Electronic Moisture Tester, completely redesigned to combine valuable *new* advancements and time-tested features of previous models.

And, here's how the Steinlite helps bring you *greater* returns! *Moisture is an important profit factor in your business*—in buying and selling, in processing and storing. The speedy, dependable, easy-to-use Steinlite is essential in every phase of your operation where moisture content determines price, grade or quality. You can make an *accurate* test in one minute without destroying the sample. A Steinlite instantly gives you the true moisture content of a wide variety of free-flowing materials. Charts have already been prepared for more than 200 products.

This new Model 400-G Steinlite covers a broader moisture range than former models—quickly registers as low as 1½% on peanuts and up to 50% on high moisture corn. Meter readings are made more accurately with a single selector switch. A dial thermometer, built into the instrument, makes temperature adjustments easier. A longer trouble-free life is assured by the increased stability of the electronic circuit and rugged chassis. Charts are calculated to check with government inspection points. Test pads are available to check the electrical accuracy of the machine.

The reliable, economical, constantly improved Steinlite, the result of 20 years of continuous research, is the world's most popular moisture tester. Remember, too, that for 39 years Seedburo has provided the most highly developed moisture testing service in America. Take advantage of it by bringing your moisture testing problems to Seedburo . . . now!

Inquire about the trade-in allowance on your present Steinlite Moisture Tester.

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he was chairman of the fats, oils and feeds commission of the International Emergency Food Council and a director of the fats and oils branch of U. S. Department of Agriculture, at Washington, D. C.

◆ Just published by Massey-Harris Co. is a new color catalog featuring its accurate high speed planting tools. Listed and illustrated is the firm's complete line of grain drills, press drills, combination drills, drill corn planters, listers and bedders.

◆ Allis-Chalmers Manufacturing Co., Milwaukee 1, Wis., has published a 40-page 1950 Annual Review of engineering developments by the firm. There is a section on processing and refining.

◆ *"Devoe's 87 Spar Varnish," which contains soybean fatty acids, was described in the winter issue of Progress thru Research, General Mills, Inc. publication.*

◆ "Drying Oils—Past, Present and Future," was an article by W. G. Andrews, assistant vice president, Archer-Daniels-Midland Co., Minneapolis, Minn., in the Apr. 12 issue of Paint, Oil and Chemical Review.

◆ James V. McLaughlin has been elected assistant secretary and assistant treasurer at the annual meeting of American Spirits Co. He has become manager of the firm's New York and eastern branch offices.

◆ Dr. Donald H. Wheeler, director of sales and technical service for General Mills' chemical division, joined the company's research laboratories June 1. He will direct a basic research program on the chemistry of drying oils and will act as consultant on all of the firm's chemical operations.

◆ *Kraft Foods Co., Chicago, has made its entry into the salad oil field. The product is a light-bodied, smoothly blending vegetable oil.*

ELECTED BY PRATER

George F. Thomas, elected president of Prater Pulverizer Co., Chicago, at a recent meeting of the board of directors. He will also continue in his former capacity of general manager. He has been with the firm for 20 years and succeeds the late Ralph Prater as head of the company.

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WASHINGTON DIGEST

By WAYNE DARROW
Washington Correspondent for
The Soybean Digest

PRICE BATTLE. The drive of the livestock industry to knock out beef and all other price controls has impressed but not convinced Congress that such a drastic reversal is expedient.

Whatever the outcome, the policy hammered out for beef may have a great bearing on the treatment given soybeans and all other farm products. It may well affect control policy for consumer goods, and for wages.

The result seems likely to be retention of, but relaxation in, farm price controls. The July and September beef price rollbacks seem sure to be called off. The Administration request to freeze parity for ceiling purposes at the start of each marketing year is not apt to be voted by Congress.

The farm crowd in Congress got just the break they'd hoped for, in some form, when Price Stabilizer DiSalle ordered his series of three beef price rollbacks. The move got the Farm Bloc off the hook. Leaders shifted from defense of parity and high farm prices (that had worried them for months), to an all-out attack on the price controllers.

The cities have yet to be heard from. But with the lull in the war and in prices, and with the public disgust with goings-on in Washington generally, it seems unlikely that a majority will emerge in Congress with enough strength to tighten up farm price controls.

The path of least resistance appeals to most lawmakers just now. That is, to patch up the Defense Production Act a little, and extend it. Congressmen—even most of those from farm states—are afraid to knock out all price controls.

DiSalle went much farther in his beef price rollbacks than his subordinates recommended. The reason was that the present rollback (only one originally intended) doesn't lower beef prices to consumers. The cut in live cattle prices had to go to straighten out margins for packers and distributors, as specified in the law itself.

Such a deal was to DiSalle a bum political deal. It didn't make sense. Moreover, it would deprive him of the only support he could expect to get—from consumers. So he ordered two more rollbacks and waited to see how far the country is willing to go on controls.

Top defense officials say it's all wrong to think that business is going to stay dullish quite a while, and that inflation isn't anything to worry much about. They say we're in a lull between the war scare boom of last winter, and the impact of large defense orders placed months ago and to be felt early this fall. Rising prices and growing civilian shortages will plague the country in a few months. Overstocked inventories won't last long. Even if the war subsides, the world quiets down, and defense work slackens, the pipe lines are already so full of defense orders that business will be bolstered for another year.

FORECAST. Farm officials think this will probably be a good crop year—perhaps extra good. They expect prices of soybeans to be at or close to the loan during harvest, and for wheat and corn prices to sag a little under. Rises above loans but not as high as ceilings are expected around the first of the year. They think livestock prices will be good, but not soaring this summer and fall. Hog prices at the farm of about $23.50 a cwt. are foreseen in September—and down to about $20 in December. No ceilings.

The Bureau of Agricultural Economics estimates indicate that farmers will have more net income this year than for any year since 1947. After paying cash expenses farmers this year should have about one-tenth less buying power than in 1947, but one-fifth more than last year. Nonfarm people, on the other hand, should average this year one-fourth more buying power than in 1947.

CEILINGS. Aside from a four-cent-a-bushel cut in price ceilings at country elevators, price officials plan no major changes in ceilings on beans, oil and meal for the 1951-52 marketing year. They intend to leave the Chicago ceiling where it is. They think they can cut the country point ceiling four cents or even five cents a bushel and still comply with the legal farm minimum ceilings in every county.

The chief aim of the May 17 OPS price order was to clear up the question as to just what the farm price ceiling should be. It's the price at the nearest elevator less three cents a bushel hauling, and less the uniform grain storage allowance. But if a farmer delivers to the elevator, his

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ceiling is the elevator price less the storage allowance.

PRICES. Official guessing on 1951-52 soybean prices comes to about this: Farm prices 20 cents to 30 cents a bushel higher for the average of the entire season than this year. The weighted farm price average last October-December was $2.35 a bushel. This fall it's expected to fall within the range of $2.50 and $2.65 a bushel. Some look for the Chicago seasonal average to run as high as $3.20, and farm prices to average $2.95 a bushel. More think this is too high an estimate.

Officials think oil prices will decline slightly. This is based on an estimated 5 percent increase in total supply of edible oils, lower inventories, and normal consumption. Margarine consumption seems to be falling short of some expectations.

Meal price futures are believed too low in view of the historic relationship with corn prices. Unless the corn crop is unusually large, a farm price average for the entire year of close to $1.60 is anticipated. This would point to $63 to $67 a ton meal, bulk Decatur.

The cotton crop looks good. Reports indicate an acreage above 28 million acres, compared to 19 million a year ago. A seed crop of 6 million tons or more is expected from a crop of close to 16 million bales. This would increase cottonseed supplies 50 percent over 1950.

However, officials point out that the size of the soybean crop is the big factor in the total edible oil supply. Beans produce two and one-half times as much oil per acre as cotton, on the average. They're guessing the bean crop this year at around 240 million bushels.

Incidentally, if you couldn't make the government's soybean stock figures of April jibe with the estimated 1950 production, take comfort that officials can't either. The two sets of figures fail to match by about 10-12 million bushels. Part is believed due to an over-estimate of the total crop, part to duplications in stock reports.

EXPORTS. The export prospect looks good. Demand for edible fats and oils likely will be a little larger than for the past year. Foreign interest is picking up, judging by official inquiries. Increased exports are based on an expectation abroad that U. S. prices will decline a little.

Improved exports are anticipated despite the fact that world inflation tends to cut them down. Foreign governments are trying to cut down the cost of living. To slow up rises in margarine prices, quite a few countries are using consumer subsidies. But prices of the raw ingredients have been rising, and there is a limit somewhere. Further price increases of imported fats and oils would probably cut foreign margarine consumption. Foreigners seem convinced that U. S. fats and oils prices are either coming down some, or won't go up. On that basis they're prepared to buy.

Soybean oil is shipped to more than 50 countries—leads every other farm product in this respect. However, European demand is greater for beans than for oil. Most countries are over-expanded on both crushing and refining facilities. Governments are trying to protect their refining industries. Hence most of them want

Market Street

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

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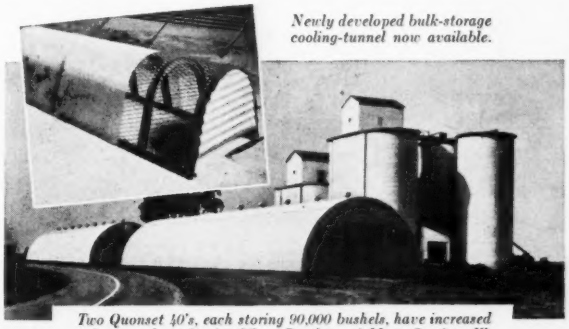

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beans rather than oil, but if oil must be imported, they prefer crude to refined.

This is reflected in the new trade agreements negotiated at Torquay, England. France, in particular, arranged to get more beans and less oil from the U. S.

Here are some of the highlights of the new agreements as they affect fats and oils:

France tripled her duties against U. S. soybean, corn and sunflower oils for soap, and doubled her duties against these oils for other uses. This was the pay-off for reducing her duties on U. S. beans.

Duties were cut, or bound against increase, on U. S. soybeans to Germany and Austria; on soybean oil to Germany; and on margarine, soybean and cottonseed oil to Austria.

Germany and France reduced—or guaranteed against increase—their duties on U. S. lard, unrendered hog fat, and rendered tallow and oleo stearin unfit for human consumption.

We lowered duties on imports from Canada of edible tallow, and animal fats and oils.

The new trade pacts involve 17 countries. They won't have much effect on farm exports now, but are expected to help later when the world scramble for commodities eases off. The most significant single feature is the pact with West Germany, the first one made since the trade agreement program was started in the 1930s.

The most important U. S. gains were on grains, fats and oils, cotton and fruits. The most important U. S. concessions were on tobacco, cotton, dairy products, seeds, bulbs, and nursery stock.

NEED STEEL. The Department of Agriculture is trying hard, but is getting almost nowhere as a claimant for steel and most other scarce materials needed in farm production and processing. It has won an uncertain victory over defense officials on steel for farm machinery.

On processing machinery, agriculture officials have thought they had a satisfactory deal in the bag several times, only to learn they'd lost again.

One big trouble is that the Department of Agriculture hasn't yet succeeded in getting the Office of Production Defense to acknowledge that agriculture, or food, is essential to national defense. Farm equipment manufacturers or food processors look the same to the top brass in DPA as do manufacturers of ash trays, toys, bicycles, etc.

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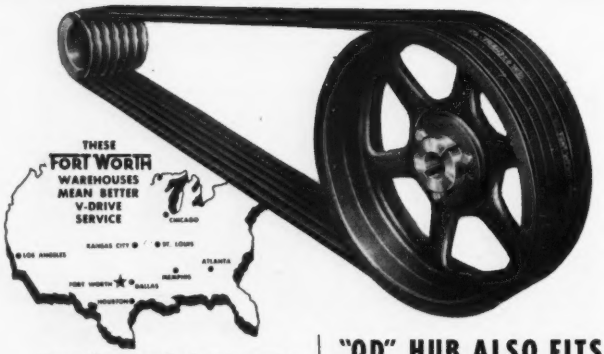
OIL CHEMISTS ELECT OFFICERS

Election of officers for the 1951-52 term was announced at the annual meeting of the American Oil Chemists' Society May 2 in New Orleans, following a mail balloting on the part of the membership earlier in the season.

Incoming officers are A. E. Bailey, president, research director for the Humko Co., Memphis, Tenn.; E. M. James, vice president, assistant to the technical adviser to the board of Lever Brothers Co., New York City; T. H. Hopper, secretary, head of the analytical and physical division, Southern Regional Research Laboratory, New Orleans; J. J. Vollertsen, treasurer, retired chief of chemical research development for Armour and Co., Chicago; and three members-at-large A. R. Baldwin, research chemist for Corn Products Co., Argo, Ill.; J. C. Konen, research director for Archer-Daniels-Midland Co., Minneapolis, Minn.; and C. E. Morris, production manager, refinery division, Armour & Co., Chicago.

SEE FOR YOURSELF—Next time try a

FORT WORTH TRANSCO QD SHEAVE



You will receive the best in service, sheaves, and V-belts when you buy a Fort Worth-Transco V-drive.

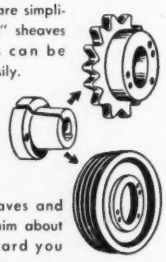
Two manufacturing plants and a large foundry designed to make V-belt sheaves assure volume production even in periods of short supply. Factory warehouses supplemented by numerous stocking distributors provide quick delivery on stock sizes.

The advantages of "QD" construction are many. We will be pleased to explain them to you at any time.

Fort Worth-Transco V-Belts are made for us under our own trade name by B. F. Goodrich in the patented Grommet construction (C, D, and E sizes). A and B sizes are made in the proven "Style 7" construction. All belts are "Double-Matched" to assure long drive life and complete satisfaction.

"QD" HUB ALSO FITS NEW FORT WORTH "QD" Roller Chain Sprocket

Speed changes are simplified and "spare" sheaves and sprockets can be carried more easily.



If your favorite distributor doesn't stock the Fort Worth QD line—both sheaves and sprockets—tell him about them. He'll reward you with better service.

Write for name of nearest distributor and for descriptive catalogs on "QD" Sprockets and Sheaves.

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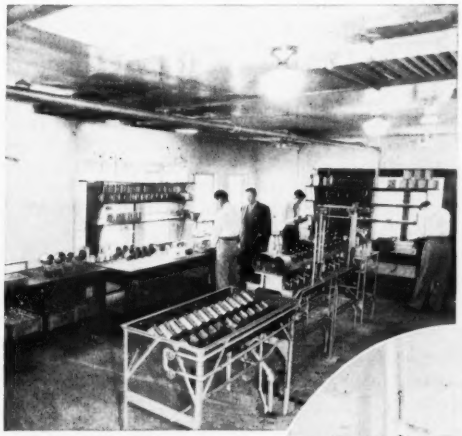

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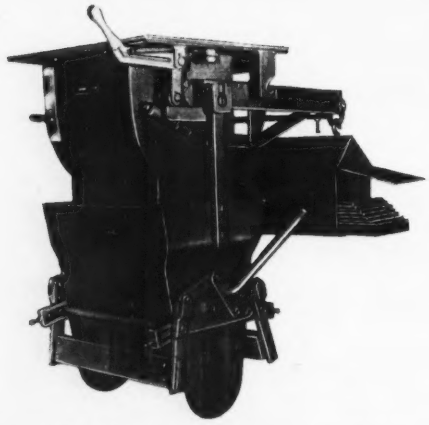

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a combination of notable improvements to be found in no other bagging scale at **any** price

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IN THE MARKETS

May Sees Market Sag

All markets lost considerable ground in May.

New crop soybean futures hit a new low for the season, and July futures fell well below the ceiling. Meal dropped back to the low point of early April, and crude soybean oil broke below government ceilings for the first time since they were established.

November soybean futures lost about 20c in May; spot bulk soybean oil meal lost $7 and crude soybean oil 2 cents. May soybeans remained at the $3.33 ceiling until May 22 when the future was closed out.

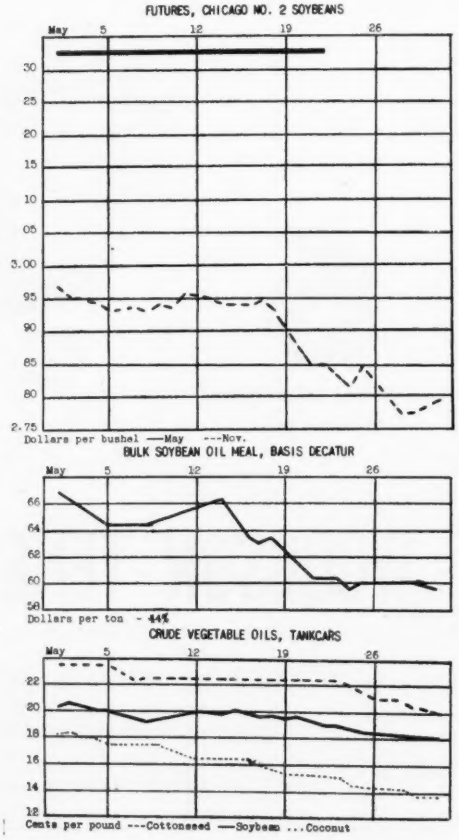
Bearish influences included:

1—Weakness in the soybean products meal and oil, with an unsatisfactory demand for meal.

2—A decline in grain prices.

3—Prospects for a possible 5-percent increase in vegetable oil production next year due to a probable large cotton crop and more soybeans than earlier expected.

4—Supplies of soybean oil meal in processors' hands were reported large, about double those of a year earlier. Overall output of meal was large though some producers



of 41 percent meal were closed down, due to unfavorable returns on their operations.

5—Some increase in country offerings of soybeans. Country shippers were more eager to sell.

6—Renewed talk of an early end to the war in Korea.

Edible oils fell out of bed the first week in May when prices broke sharply. They did not recover all month.

Austria was authorized by Economic Cooperation Administration to spend 1 million dollars for soybean oil, with purchase by Aug. 31 and delivery before Oct. 31.

November soybean futures sank most of the month, opening at $2.97 and closing at $2.79½. Low was $2.77¼.

Bulk soybean oil meal, 44 percent basis Decatur, opened at $67, the high, and closed at $59.50, the low.

High for soybean oil in tankcars was the ceiling price of 20½c May 2. Close was 18c, also the low.

MEMPHIS SOYBEAN OIL MEAL FUTURES CLOSINGS MAY 31*
(Contract 100 tons.)
Soybean Meal bulk—Decatur
July, flat 71.75; Oct., flat 58.50; Dec. flat 58.45; Jan. 57.75@58.45; Mar., 58.25. Sales: soybean meal—6,300 tons.

CHICAGO SOYBEAN OIL FUTURES CLOSINGS MAY 31*
July, 17-80-b .81a; Sept., 16.62b-63a; Oct., 15.42b-44a; Nov., 1535; Dec., 15.02b-.05a, Jan., 14.92b-.93a; Mar. 14.82b-.86a.

NEW YORK SOYBEAN OIL FUTURES CLOSINGS MAY 31*
Old Contract
Closings: Nov. '51, 15.05b; Jan. '52, 14.85b; May, 14.83b; July, 14.70b; Sept., 14.70n; Oct., 14.50n.
New Contract
Closings: July, 17.65b; Sept., 16.50b; Oct., 15.30b; Nov. 15.05b; Dec., 15.01b; Jan., '52, 14.85b; March, 14.85b; May, 14.83b; July, 1.70b; Sept., 14.70n; Oct., 14.50n.
*Reported by Chicago edition of Wall Street Journal.

FUTURES TRADING AND OPEN CONTRACTS IN SOYBEAN OIL MEAL ON MEMPHIS MERCHANTS EXCHANGE CLEARING ASSOCIATION
(As reported by members, in tons)

	Volume of trading	Open Contracts		Volume of trading	Open Contracts
Apr. 27	10,400	189,900	May 12	1,400	189,500
Apr. 28	6,400	191,400	May 14	4,500	190,500
Apr. 30	11,600	192,000	May 15	4,700	189,700
May 1	7,800	193,700	May 16	10,300	187,600
May 2	8,400	193,500	May 17	8,400	186,000
May 3	7,300	190,300	May 18	7,700	185,300
May 4	8,900	188,500	May 19	3,800	186,100
May 5	5,700	189,600	May 21	7,800	185,600
May 7	6,700	185,700	May 22	9,100	186,700
May 8	9,700	186,200	May 23	12,700	180,200
May 9	3,500	186,200	May 24	16,600	177,600
May 10	9,900	188,100	May 25	6,100	176,900
May 11	4,900	189,800	Total for 25 days reported		194,300

● **FACTORY USE SOYBEAN OIL.** Factory production of crude soybean oil in March totaled 240,426,000 lbs. compared with 215,973,000 lbs. in February, reports Bureau of the Census.

Factory production of refined soybean oil in March was 187,733,000 lbs.; in February, 171,360,000 lbs.

Factory consumption of crude soybean oil in March was 214,626,000 lbs.; in February 183,691,000 lbs. Factory consumption of refined soybean oil in March was 165,942,000 lbs.; in February, 162,202,000 lbs.

Mar. 31 factory and warehouse stocks of crude soybean oil totaled 130,692,000 lbs.; Feb. 28 stocks were 131,235,000 lbs. Mar. 31 stocks of refined soybean oil totaled 98,320,000 lbs.; Feb. 28 stocks totaled 70,495,000 lbs.

Factory usage of crude soybean oil in February included: soap 111,000 lbs.; paint and varnish 250,000 lbs.; other inedible products 1,266,000 lbs.

Usage of refined soybean oil in February included: shortening 58,184,000 lbs.; margarine 5,694,000 lbs.; other edible uses 6,451,000 lbs.; paint and varnish 5,288,000 lbs.; lubricants and greases 19,000 lbs.; other inedible products 6,821,000 lbs.

Hydrogenated edible soybean oil entered into the following uses in February: shortening 18,458,000 lbs.; margarine 32,407,000 lbs.; other edible uses 1,467,000 lbs.; inedible products 3,000 lbs.

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● PROCESSING OPERATIONS. Reported by Bureau of Census, Department of Commerce for February, March.

PRIMARY PRODUCTS EXCEPT CRUDE OIL, AT CRUDE OIL MILL LOCATIONS: PRODUCTION, SHIPMENTS AND TRANSFERS AND STOCKS, MARCH 1951—FEBRUARY 1951

Products	Production		Shipments and transfers		End of month stocks	
	March 1951	Feb. 1951	March 1951	Feb. 1951	March 31, 1951	Feb. 28, 1951
SOYBEAN:						
Cake & meal†	580,330	528,759	543,445	517,097	141,115	104,230
Lecithin‡	1,990,216	1,723,271	1,871,756	1,742,668	738,628	620,168
Edible soy flour, full fat†	527	430	476	485	184	133
Edible soy flour, other†	6,411	4,693	6,420	5,144	1,191	1,200
Industrial soy flour	2,452	2,171	2,579	2,051	432	559

† Unit of measure in tons. ‡ Unit of measure in pounds.

SOYBEANS: RECEIPTS, CRUSHINGS AND STOCK AT OIL MILLS, BY STATES, MARCH 1951—FEBRUARY 1951
(Tons of 2,000 pounds)

State	Receipts at mills		Crushed or used		Stocks at mills	
	March 1951	Feb. 1951	March 1951	Feb. 1951	March 31, 1951	Feb. 28, 1951
U. S.	436,400	503,286	742,106	674,095	1,883,931	2,189,637
Arkansas	(*)	(*)	19,682	18,430	60,289	81,765
Illinois	168,787	214,281	286,125	247,087	667,618	784,956
Indiana	29,899	44,158	52,473	52,894	186,934	209,508
Iowa	94,727	107,787	112,281	104,398	287,740	305,294
Kansas	13,116	14,949	18,363	16,910	19,155	24,402
Kentucky	9,592	10,145	18,457	15,320	64,046	72,911
Minnesota	18,615	22,024	27,879	26,384	38,533	47,797
Missouri	(§)	(§)	27,533	24,501	84,704	(§)
Nebraska	3,626	(*)	5,427	4,698	23,463	25,264
N. Carolina	340	1,050	9,036	10,510	27,448	36,144
Ohio	64,205	54,126	72,420	66,770	241,648	249,863
Oklahoma	3,279	1,866	3,624	3,045	(§)	(§)
Texas	(§)	333	4,432	4,358	(§)	10,389
All Other	32,008	41,414	84,374	78,790	182,353	341,344

* Receipts exceeded by reshipments of beans previously received and held in the State. U. S. receipts are on a net basis, excluding transfers between mills. § Included in "All other" to avoid disclosure of individual operations.

SOYBEAN PRODUCTS: PRODUCTION AND STOCKS AT OIL MILL LOCATIONS, BY STATES, MARCH 1951—FEBRUARY 1951

State	Crude oil (thousand pounds)				Cake and Meal (tons)			
	Production		Stocks		Production		Stocks	
	March 1951	Feb. 1951	March 31, 1951	Feb. 28, 1951	March 1951	Feb. 1951	March 31, 1951	Feb. 28, 1951
U. S.	240,426	215,973	50,460	50,226	580,330	528,759	141,115	104,230
Arkansas	5,886	5,389	1,001	1,089	15,561	14,574	4,777	2,096
Illinois	97,567	83,876	14,544	13,772	214,042	186,555	42,900	30,508
Indiana	17,208	17,236	2,296	2,835	41,535	41,630	(*)	(*)
Iowa	35,871	32,877	7,462	9,256	91,824	85,301	11,832	6,551
Kansas	5,716	5,293	1,038	1,506	15,030	14,079	3,241	2,550
Kentucky	6,356	5,388	797	661	14,152	11,808	897	695
Minnesota	8,814	8,297	3,432	3,695	22,596	20,970	4,467	2,090
Missouri	8,135	6,600	1,492	1,769	22,237	18,735	4,122	1,992
Nebraska	1,639	1,411	457	499	4,571	4,020	(*)	(*)
N. Car.	2,464	2,995	899	1,260	7,166	8,210	10,494	9,728
Ohio	23,051	21,204	3,670	2,760	57,697	53,474	3,032	3,003
Oklahoma	1,083	905	(*)	291	2,818	2,532	1,975	4,939
Texas	1,428	1,327	245	520	3,527	3,474	3,111	2,991
All other	25,208	23,175	13,127	10,313	67,574	63,397	50,267	37,087

* Included in "All other" to avoid disclosure of individual operations. Prepared by Bureau of the Census, Industry Division, Chemicals and Wood Products Section.

● SOYBEAN GLUE. Consumption of soybean glue by the softwood plywood industry in February was 4,596,000 lbs. compared with 5,069,000 lbs. in January; and 3,009,000 lbs. in Feb. 1950.

Consumption of phenolic resin glue in February was 4,668,000 lbs.; and of all glues, 10,086,000 lbs.

Stocks of soybean glue Feb. 28 totaled 4,121,000 lbs. compared to 3,282,000 lbs. Jan. 31; and 1,888,000 lbs. Feb. 28, 1950.

●SOYBEAN STOCKS. Production and Marketing Administration's commercial grain stock reports.

(1,000 bu.)	May 7	May 14	May 21	May 28
Atlantic Coast	287	184	154	155
Gulf Coast	886	866	585	485
Northwestern and Upper Lake	291	708	161	147
Lower Lake	3,451	3,112	2,576	2,583
East Central	2,227	2,154	1,986	1,598
West Central Southwestern & Western	1,211	1,054	985	974
Pacific Coast	0	91	91	180
Total current week	8,353	8,169	6,532	6,122
Total year ago	8,157	8,356	7,739	7,276

Soybean stocks of nearly 142 million bushels in all storage positions on Apr. 1, are indicated by reports assembled by the Bureau of Agricultural Economics. Not only are such stocks about a sixth larger than on Apr. 1, 1950, they are the largest for the date in the nine years of comparable record.

Among the reports assembled to obtain the current stocks total are those of the Crop Reporting Board, estimating over 46 million bushels remaining on farms and over 20 million bushels at interior mills, elevators and warehouses. Farm stocks were slightly larger than a year earlier, and were exceeded on Apr. 1 only in 1943 and 1949. Stocks at interior mills, elevators and warehouses were larger than usual, having been exceeded on Apr. 1 only in 1945. Also included are 12½ million bushels of commercial stocks at terminals, as reported by the Production and Marketing Administration, well within the usual range for that position. The largest portion is the 63 million bushels at processing plants.

Disappearance from the estimated supply of 290 million bushels on Oct. 1, 1950, is thus estimated at over 148 million bushels. However, reports of the Bureau of the Census indicate about 139.3 million bushels processed, in addition to which there were exports of nearly 16 million bushels and a small quantity used for feed and other purposes. Thus an unexplained discrepancy is still apparent, but is much smaller than indicated by the report as of Jan. 1.

STOCKS OF SOYBEANS, APRIL 1, 1951, WITH COMPARISONS

Position	Apr. 1, 1949	Apr. 1, 1950	Jan. 1, 1951	Apr. 1, 1951
	Thousand bushels			
*On Farms	52,279	45,778	97,671	46,114
§Terminals	7,206	10,241	13,915	12,513
‡Processing Plants	36,305	47,991	77,163	62,798
†Int. Mills, Elev. & Whses.	19,263	17,517	38,688	20,148
Total	115,052	121,527	227,437	141,573

*Reported by Crop Reporting Board.
§Reported by Grain Branch, P.M.A.
‡Reported by Bureau of the Census.
†Reported by Crop Reporting Board. All off-farm storages not otherwise designated.

OFF-FARM† STOCKS OF SOYBEANS, APRIL 1, 1951 WITH COMPARISONS

State	Apr. 1 1950	Jan. 1 1951	Apr. 1 1951	State	Apr. 1 1950	Jan. 1 1951	Apr. 1 1951
	Thousand bushels				Thousand bushels		
Ohio	10,231	11,078	10,046	Kans.	1,064	1,616	1,501
Ind.	6,386	11,331	8,069	N. C.	782	1,876	944
Ill.	29,798	48,029	36,849	Ky.	1,756	2,653	2,319
Minn.	2,914	6,578	4,452	Ark.	1,283	4,799	2,106
Iowa	11,359	17,836	15,167	All Other	6,050	16,436	9,047
Mo.	4,126	7,534	4,959	U. S.	75,749	129,766	95,459

† Includes stocks at processing plants, as enumerated by the Bureau of the Census; commercial stocks at terminals, reported by the Grain Branch, P.M.A., and stocks in interior mills, elevators, warehouses, estimated by the Crop Reporting Board.

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How Deep Do Soybean Roots Grow?

To The Editor:

As you will appreciate, I was much interested in the article, "Do Soybeans Cause Clover Failures," by F. A. Frank in Soybean Digest for March. The results and experiences are very similar to ours.

However, I question the figure on "Root Systems of Various Crops" which you credited to Dr. A. J. Ohlrogge. I do not know where Dr. Ohlrogge got his data for soybeans. The only extensive study of soybean roots that I know of is in Ohio Agricultural Experiment Station Bulletin 404 by Borst and Thatcher. This very detailed bulletin shows that at every stage from germination until maturity the roots of soybeans are much deeper in the soil than the tops are above it. Except for soils having a type of hardpan the roots always reached four feet and generally five feet in depth.

If you will stop and think for a moment how drought-resistant soybeans are—how well they maintain themselves in dry weather—you will realize that the roots go very much deeper than Mr. Ohlrogge's diagram shows.

They appear to be as deeprooted as corn. Furthermore, red clover in the dozens of samples that I have dug here in Ohio does not go much below five feet the first year. In other words, in the first year it is no deeper than wheat so that the comparison between wheat and red clover is not a fair one unless the clover lives more than its usual life span.—*C. R. Willard, professor of agronomy, Ohio State University, Columbus, Ohio.*

To The Editor:

These drawings (mentioned at left) were made after a survey of the data with the object in mind to sort of present the picture of the relative distribution of the roots of these four crops between the various soil horizons. The actual soil which I had in mind when these drawings were made was the poorly drained soils which are typical of the agricultural soils of central Indiana. Soil types like the Crosby's, Fincastles and other soil types make up a high percentage of our good agricultural soils.

As you are well aware, there certainly is a very limited amount of information on this subject.

The diagrams depict the picture as I saw it some seven or eight years ago when they were made. Your comments were certainly indicative of the need for additional information on the character of root systems, and I certainly am in accord with that viewpoint.

What we need here in the Midwest is a Dr. J. E. Weaver who certainly has done an excellent job in Nebraska on the soils and crops in that area. The picture presented by his studies certainly has a very limited application in the Midwest.—*A. J. Ohlrogge, associate professor in agronomy, Purdue University, Lafayette, Ind.*

LETTERS

Start with Farmers

To The Editor:

It strikes me as imperative that every effort be made to improve the grade of beans, not only for export but domestic consumption as well.

I believe that the most effective way of improving the grade is by grade standards and prices. In other words, penalize the farmer that delivers sub-standard beans, and pay him a premium for beans above standard.

The best way I know is to start with the farmer. Get him to install a cleaner on his combine. By doing this and with the proper adjustment of his combine he can get a No. 1 grade of beans, as was the case with the most of the 40,000 bushels that we shipped for export last year.

You know as well as I do that this operation of cleaning the beans after delivery at the port can and will soon end up in a "racket," hence my idea for starting with the farmer.

The elevator or warehouseman I think would be the next best bet. They could grade the beans when delivered, if substandard pay for them accordingly, or put them over a cleaner at a nominal charge and pay the farmer for his improved grade, which I would say would net the farmer more in the end, after paying for the cleaning.

After all, you cannot get away from the dollar-and-cent angle. Unless a difference in price is made on the different grades I do not see how you can expect to improve the grade. —*W. M. Scott, Scott Plantations, Tallulah, La.*

LITTLE ASA'S BULLETIN

Do you have your hotel reservation for the ASA convention in Des Moines Sept. 6-8? See page 10.

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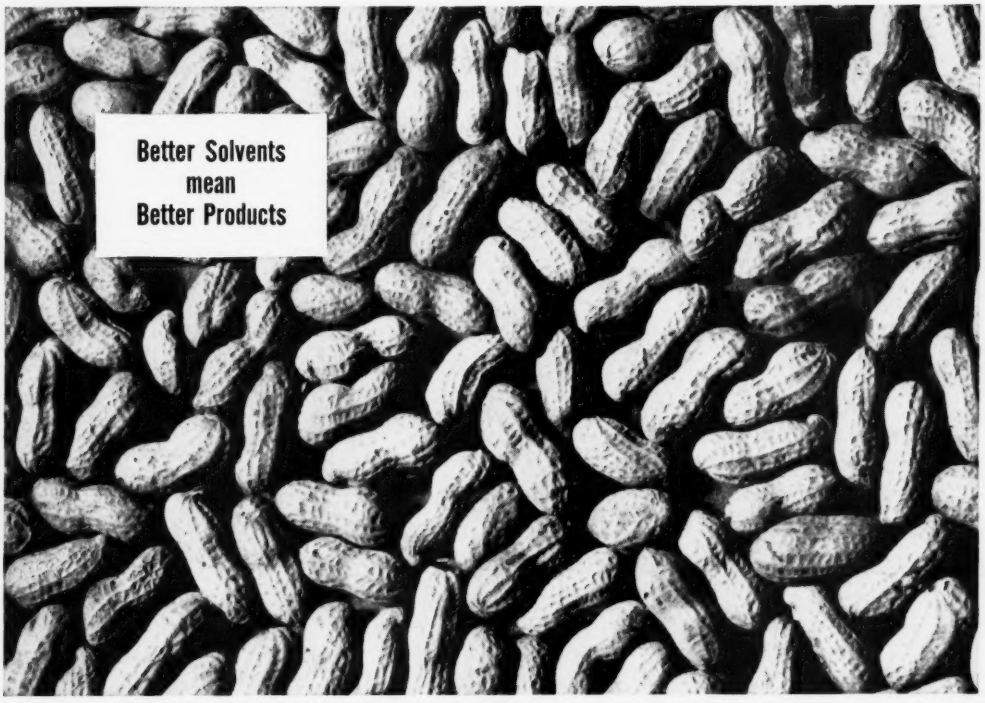

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